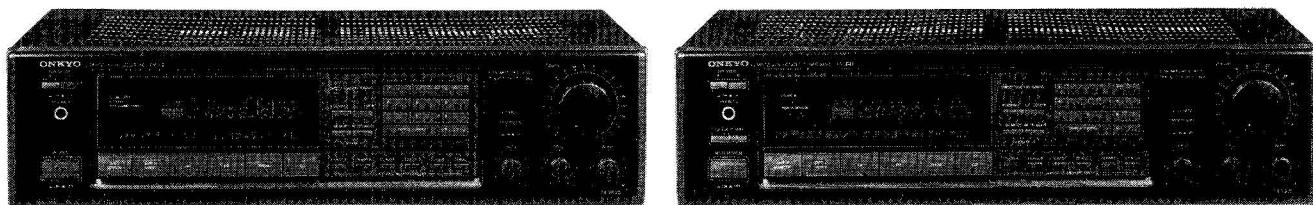


ONKYO SERVICE MANUAL

QUARTZ SYNTHESIZED TUNER AMPLIFIER MODEL TX-7900 MODEL TX-7920



Black and Silver models

SAFETY-RELATED COMPONENT WARNING!!
COMPONENTS IDENTIFIED BY MARK Δ ON
THE SCHEMATIC DIAGRAM AND IN THE PARTS
LIST ARE CRITICAL FOR RISK OF FIRE AND
ELECTRIC SHOCK. REPLACE THESE COMPO-
NENTS WITH ONKYO PARTS WHOSE PART
NUMBERS APPEAR AS SHOWN IN THIS
MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE
MEASUREMENTS TO DETERMINE THAT EXPOSED
PARTS ARE ACCEPTABLY INSULATED FROM
THE SUPPLY CIRCUIT BEFORE RETURNING
THE APPLIANCE TO THE CUSTOMER.

TABLE OF CONTENTS

Specifications	2
Service procedures	3
Exploded view Model TX-7920	4
Parts list Model TX-7920	5
Exploded view Model TX-7900	6
Parts list Model TX-7900	7
Block diagram Model TX-7920	8
Block diagram Model TX-7900	9
IC block diagram and descriptions	10
Packing view	17
Adjustment procedures	18
Printed circuit board view from bottom side	21
Schematic diagram	
Model TX-7920	23
Model TX-7900	25
Printed circuit board-parts list	
Model TX-7920	29
Model TX-7900	32

ONKYO
AUDIO COMPONENTS

SPECIFICATIONS

AMPLIFIER SECTION

Power Output:

Dynamic Power Output:

Continuous Power Output:

Total Harmonic Distortion:

IM Distortion:

Damping Factor:

Frequency Response:

RIAA Deviation:

Sensitivity and Impedance:

Phono Overload:

Signal-to-Noise Ratio:

Tone Controls:

Muting:

LOUDNESS (-30dB):

TX-7920

60 watts per channel, min. RMS, at 8 ohms, both channels driven, from 40Hz to 20kHz, with no more than 0.2% THD.

2 X 100 watts at 4 ohms

2 X 75 watts at 8 ohms

2 X 80 watts at 4 ohms, 1kHz (DIN)

2 X 65 watts at 8 ohms, 1kHz (DIN)

0.2% at rated power

0.1% at 30 watt output

0.2% at rated power

0.1% at 30 watt output

50 at 8 ohms

20 - 30,000 Hz \pm 1dB

20 - 20,000 Hz \pm 0.8dB

Phono: 2.5mV/50 kohms

CD/Tape Play: 150mV/50 kohms

Tape Rec: 150mV/3.5 kohms

120mV RMS at 1kHz, 0.2% TDH

Phono: 80dB (at 5mV input, IHF-A)

CD/Tape: 100dB (IHF-A)

Bass: \pm 10dB at 100Hz

Treble: \pm 10dB at 10kHz

— ∞

+7dB at 70Hz, +5dB at 10kHz

TX-7900

45 watts per channel, min. RMS, at 8 ohms, both channels driven, from 40kHz to 20kHz, with no more than 0.3% THD.

2 X 80 watts at 4 ohms

2 X 60 watts at 8 ohms

2 X 60 watts at 4 ohms, 1kHz (DIN)

2 X 50 watts at 8 ohms, 1kHz (DIN)

0.3% at rated power

0.1% at 30 watt output

0.3% at rated power

0.1% at 30 watt output

50 at 8 ohms

20 - 30,000 Hz \pm 1dB

20 - 20,000 Hz \pm 0.8dB

Phono: 2.5mV/50 kohms

CD/Tape Play: 150mV/50 kohms

Tape Rec: 150mV/3.5 kohms

120mV RMS at 1kHz, 0.3% THD

Phono: 80dB (at 5mV input, IHF-A)

CD/Tape: 100dB (IHF-A)

Bass: \pm 10dB at 100Hz

Treble: \pm 10dB at 10kHz

—

+7dB at 70Hz, +5dB at 10kHz

TUNER SECTION

FM:

Tuning Range:

87.50-108.00MHz (50kHz steps)

Usable Sensitivity:

Mono: 12.4dBf, 1.2 μ V, 75ohms

1.2 μ V (S/N 26dB, 40kHz Devi.)

75ohms DIN

Stereo: 19.2dBf, 2.5 μ V, 75ohms

25 μ V (S/N 46dB, Devi.)

75ohms DIN

50dB Quieting Sensitivity:

Mono: 18.2dBf, 2.2 μ V, 75ohms

Stereo: 38.2dBf, 22 μ V, 75ohms

1.5dB

Capture Ratio:

85dB

Image Rejection Ratio:

90dB

IF Rejection Ratio:

Mono: 70dB

Signal-to-Noise Ratio:

Stereo: 65dB

Selectivity:

50dB DIN (\pm 300kHz, 40kHz dev.)

50dB

Harmonic Distortion:

Mono: 0.15%

Stereo: 0.30%

Frequency Response:

30-15,000Hz \pm 1.5dB

Stereo Separation:

40dB at 1kHz

30dB at 100-10,000Hz

Muting Level:

17.2dBf, 4 μ V

AM:

Tuning Range:

522-1610kHz (9kHz steps)

522-1610kHz (9kHz steps) or

530-1710kHz (10kHz steps) (World wide model)

30 μ V

Usable Sensitivity:

40dB

Image Rejection Ratio:

40dB

IF Rejection Ratio:

40dB

Signal-to-Noise Ratio:

40dB

Harmonic Distortion:

0.8%

TX-7920

Dimensions (W×H×D):

455×120×316mm

17-15/16" × 4-6/8" × 12-7/16"

Weight:

8.0kg, 17.6 lbs.

TX-7900

Dimensions (W×H×D):

455×120×316mm

17-15/16" × 4-6/8" × 12-7/16"

7.2kg, 15.9 lbs.

Remote control transmitter RC-223S (Only Model TX-7920)
 Transmitter: Infrared
 Signal range: Approx. 5 meters (16ft. \times 4")
 Power supply: Two "AA" batteries (1.5V \times 2)

Specifications and features are subject to change without notice.

SERVICE PROCEDURES

1. Replacing the fuses

For continued protection against fire hazard, replace only with same type and same rating fuse.

Circuit No.	Part No.	Description	Model
F902	252074	2A-SE-EAK, Primary	TX-7900
F902	252075	2.5A-SE-EAK, Primary	TX-7920
F951	252074	2A-SE-EAK, AC outlet	TX-7920

2. Safety-check out

After correcting the original service problem, perform the following safety check before releasing the set to the customer.

Connect the insulating-resistance tester between the plug of power supply cord and nickel screw on the back panel.

Specifications: More than 10M Ω

3. Changing the band step

A BAND STEP selector switch is not provided.

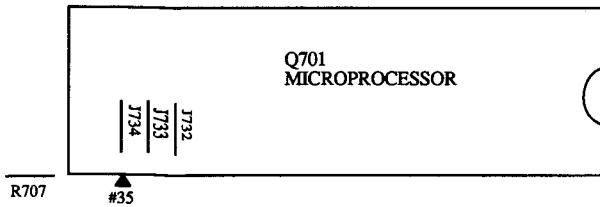
(FM)

BAND STEP	R707(10k Ω)	J734
200kHz \rightarrow 50kHz	Add	Cut
50kHz \rightarrow 200kHz		Shorted

(AM)

BAND STEP	R709(10k Ω)	J732
10kHz \rightarrow 9kHz		Shorted
9kHz \rightarrow 10kHz	Add	Cut

Refer to the page 21.



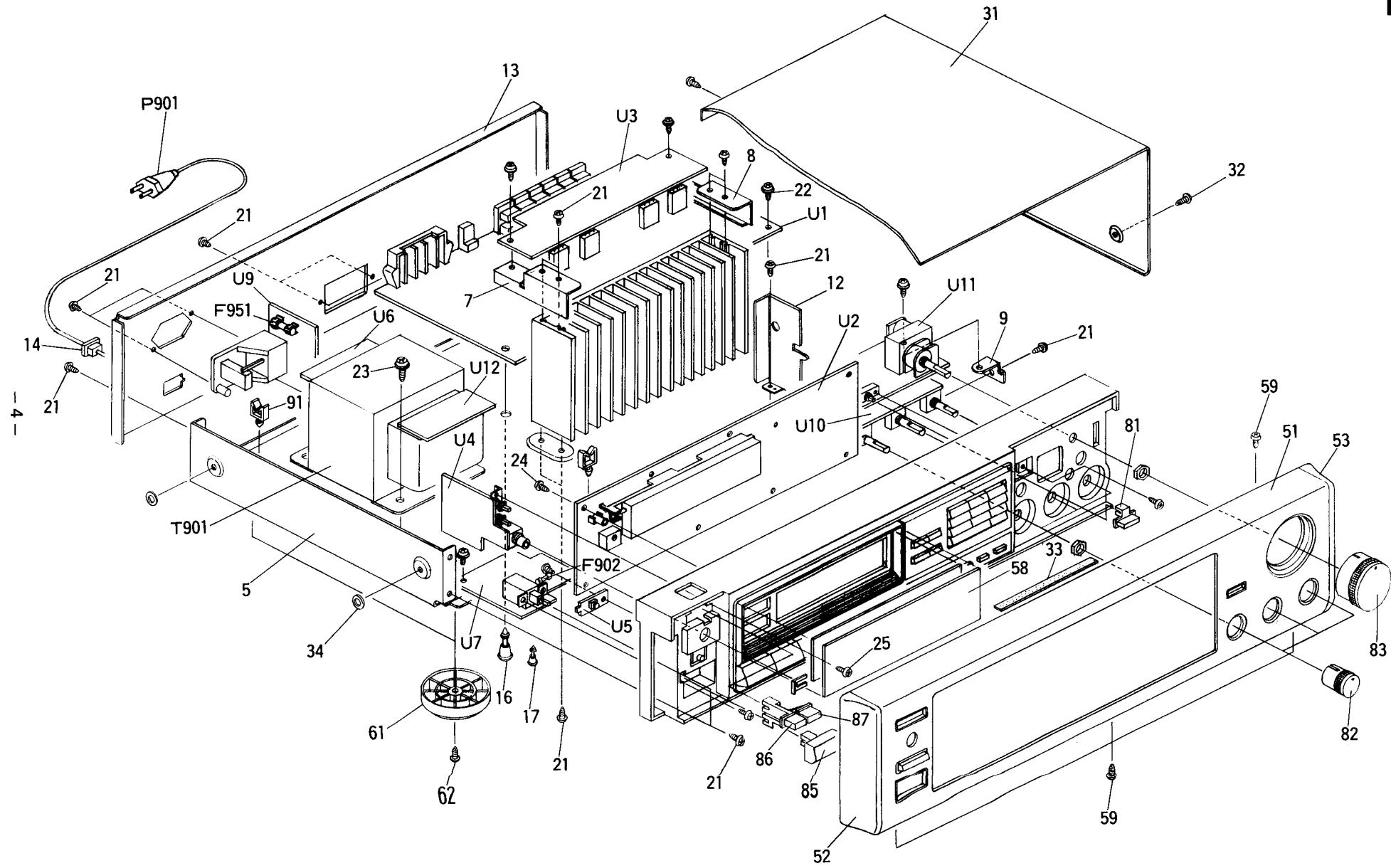
DISPLAY CIRCUIT PC BOARD

4. Memory preservation

This unit does not require memory preservation batteries. A built-in memory power back-up system preserves contents of the memory during power failures and even when the unit is unplugged. The unit must be plugged in and the power switch turned on and off once in order to charge the back-up system. Note that since this is not a permanent memory, the power switch must be turned on and off a few times each month to keep the back-up system operative. The period of time during which memory contents are preserved after power has last been turned off varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of 3 to 4 weeks (a minimum of 2 weeks) after the last time power has been turned off. This period is shorter when the unit is exposed to very high humidity or used in an area with an extremely humid climate.

EXPLODED VIEW

MODEL TX-7920



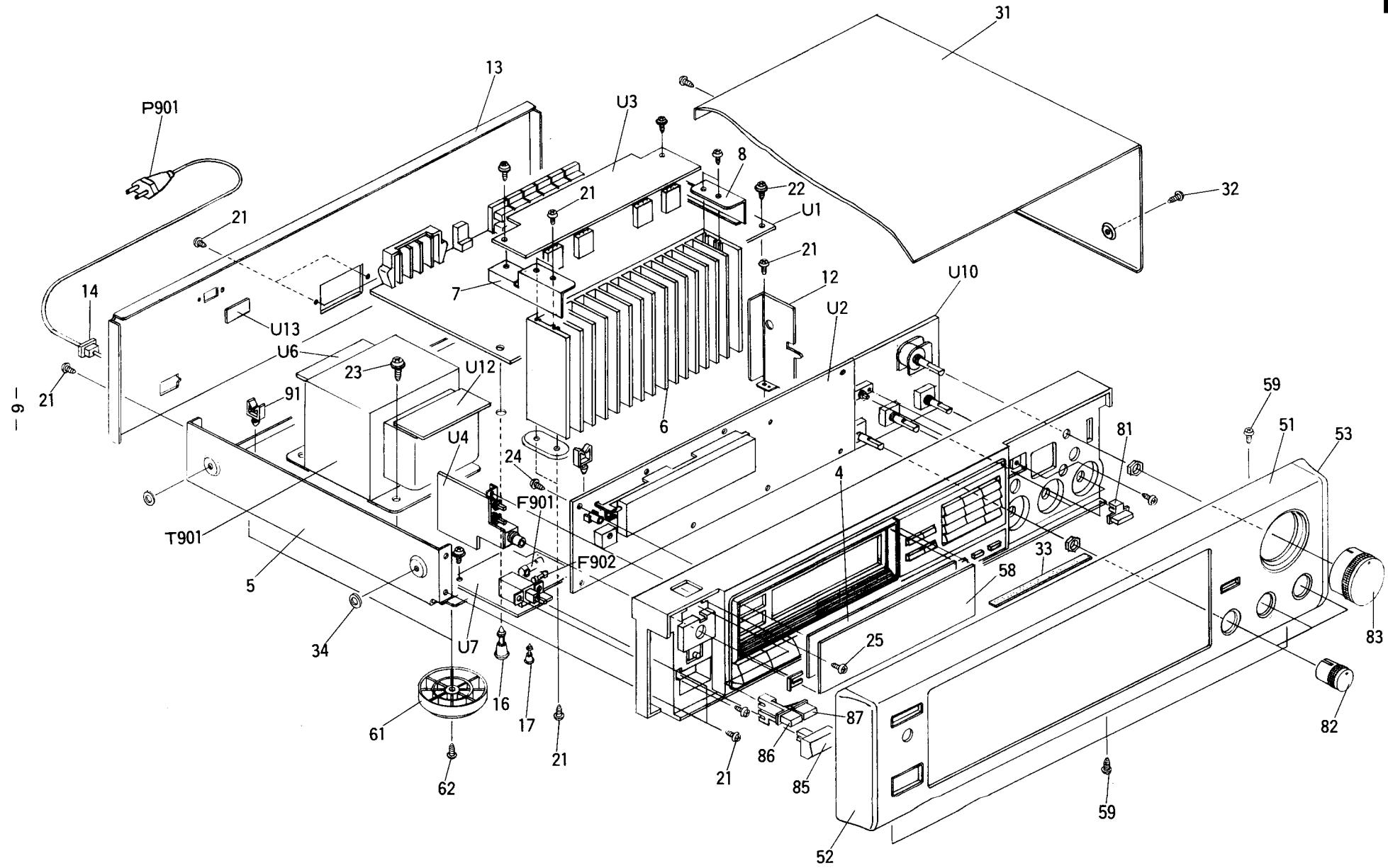
PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
1	27110680Y	Front bracket 	87	28324171Y	Knob SP B
	27110681Y	Front bracket <S>		28324173Y	Knob SP B <S>
4	28133254Y	Back plate	91	27300833	WS-2NS,Clamp
5	27100228Y	Chassis	F902	252075	△ 2.5A-SE-EAK,Fuse
6	27160293Y	Radiator	F951	252074	△ 2A-SE-EAK,Fuse
7	27141441Y	Bracket LH	P901	253164Y or	△ AS-CEE,
8	27141442Y	Bracket RH		253175Y	Power supply cord
9	27141443Y	Bracket PC	Q503,Q504	2202282,	2SA1265N-R,
12	27130643AY	Bracket,shield		2202283,	2SA1265N-O,
13	27121535-2Y	Back panel		2201693,	2SA1491-O,
14	27300750	△ Bushing		2201694 or	2SA1491-Y or
16	27190524	KGLS-14R,Holder	Q505,Q506	2202292,	2SC3182N-R,
17	27190266	KGLS-12R,Holder		2202293,	2SC3182N-O,
21	834430088	3TTS+8B(BC),Self-tapping screw		2201703,	2SC3855-O,
22	831130088	3TTW+8B,Self-tapping screw		2201704 or	2SC3855-Y or
23	830440089	4TTC+8C(BC),Self-tapping screw		2201706	2SC3855-P,Power amplifier transistor
24	833430080	3TTP+8P(BC),Self-tapping screw	T901	2300754Y	△ NPT-1129P,Power transformer
25	82143006	3P+6FN(BC),Pan head screw		U1	1A331525-1A,NARF-4325-1A,Tuner circuit pc board ass'y
26	801433	3SMS10W.SW+14B(BC),Sems		U2	1A331526-1A,NADIS-4326-1A,Display circuit pc board ass'y
		self-tapping screw		U3	1A331527-1A,NAAF-4327-1A,Power amplifier circuit pc board ass'y
31	28184471AY	Top cover		U4	1A331528-1A,NASW-4328-1A,Headphone terminal pc board ass'y
32	834430088	3TTS+8B(BC),Self-tapping screw		U5	1A331529-1,NASW-4329-1,Power switch pc board ass'y
33	28140680	0.5×180×8,Cushion		U6	1A331530-1,NAETC-4330-1,Terminal pc board ass'y
34	27270212	Spacer <P/W/Q>		U7	1A331531-1A,NAPS-4331-1A,Power supply circuit pc board ass'y
51	1A333701K	Front panel ass'y 		U9	1A331533-1,NAETC-4333-1,AC outlet pc board ass'y
	1A334701K	Front panel ass'y <S>		U10	1A331534-1A,NAAF-4334-1A,Tone control circuit pc board ass'y
52	28125226BY	End cap L		U11	1A331535-1,NAETC-4335-1,Volume control pc board ass'y
53	28125227BY	End cap R		U12	1A331537-1,NAETC-4337-1,Terminal pc board ass'y
58	28191617Y	Clear plate			
59	833430080	3TTP+8P(BC),Self-tapping screw			NOTE: :Black model only <S>:Silver model only
60	28135199	Badge			
61	27175254	Leg			
62	834430088	3TTS+8B(BC),Self-tapping screw			
71	25060044	Terminal GND			
81	28324162Y	Knob LOUD 			
	28324177Y	Knob LOUD <S>			
82	28324150-1Y	Knob LEV 			
	28324151	Knob LEV <S>			
83	28324163	Knob VOL 			
	28324182	Knob VOL <S>			
85	28324140	Knob POW 			
	28324184	Knob POW <S>			
86	28324170Y	Knob SP A 			
	28324172Y	Knob SP A <S>			

NOTE: THE COMPONENTS IDENTIFIED BY MARK △ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

EXPLODED VIEW

MODEL TX-7900



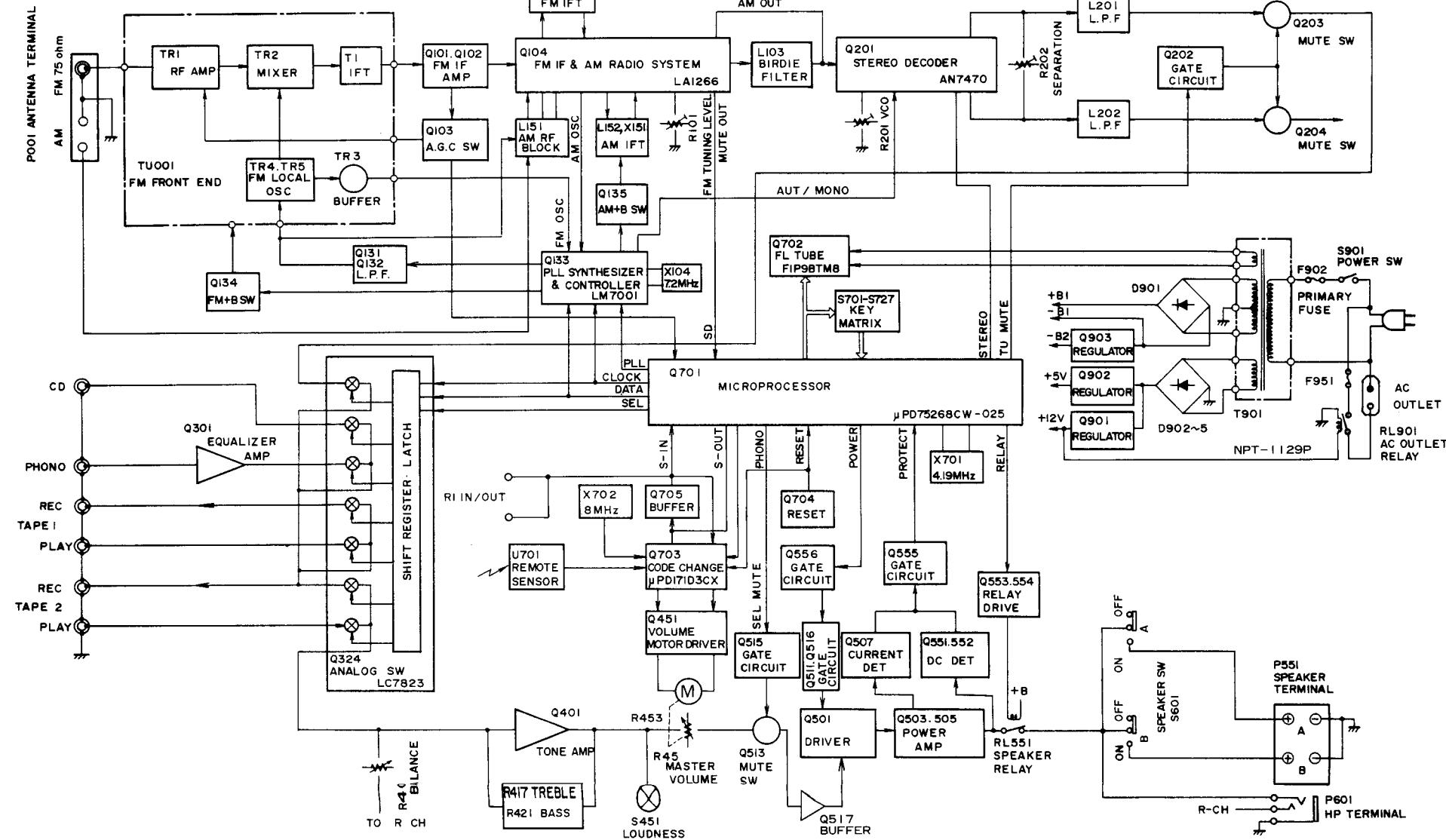
PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
1	27110680Y	Front bracket 	86	28324170Y	Knob SP A
	27110681Y	Front bracket <S>		28324172Y	Knob SP A <S>
4	28133255Y	Back plate	87	28324171Y	Knob SP B
5	27100228Y	Chassis		28324173Y	Knob SP B <S>
6	27160290Y or 27160272AY	Radiator	91	27300833	WS-2NS,Clamp
7	27141441Y	Bracket LH	F902	252074	△ 2A-SE-EAK,Fuse
8	27141442Y	Bracket RH	P901	253164Y or 253175Y	△ AS-CEE, Power supply cord
12	27130643AY	Bracket,shield	Q503,Q504	2202492, 2202493, 2202243, 2202244 or 2202246	2SA1264N-R, 2SA1264N-O, 2SA1694-O, 2SA1694-Y or 2SA1694-P,Power amplifier transistor
13	27121536-2Y	Back panel	Q505,Q506	2202502, 2202503, 2202253, 2202254 or 2202256	2SC3181N-R, 2SC3181N-O, 2SC4467-O, 2SC4467-Y or 2SC4467-P,Power amplifier transistor
14	27300750	△ Bushing	T901	2300758Y	△ NPT-1130P,Power transformer
16	27190524	KGLS-14R,Holder	U1	1A335525-2A	NARF-4325-2A,Tuner circuit pc board ass'y
17	27190266	KGLS-12R,Holder	U2	1A335526-2A	NADIS-4326-2A,Display circuit pc board ass'y
21	834430088	3TTS+8B(BC),Self-tapping screw	U3	1A335527-2A	NAAF-4327-2A,Power amplifier circuit pc board ass'y
22	831130088	3TTW+8B,Self-tapping screw	U4	1A335528-2A	NASW-4328-2A,Headphone terminal pc board ass'y
23	830440089	4TTC+8C(BC),Self-tapping screw	U6	1A335530-2	NAETC-4330-2,Terminal pc board ass'y
24	833430080	3TTP+8P(BC),Self-tapping screw	U7	1A335531-2A	NAPS-4331-2A,Power supply circuit pc board ass'y
25	82143006	3P+6FN(BC),Pan head screw	U10	1A335536-1A	NAAF-4336-1A,Tone control circuit pc board ass'y
26	801433	3SMS10W.SW+14B(BC),Sems self-tapping screw	U12	1A335537-2	NAETC-4337-2,Terminal pc board ass'y
31	28184471AY	Top cover			NOTE: :Black model only <S>:Silver model only
32	834430088	3TTS+8B(BC),Self-tapping screw			
33	28140680	0.5×180×8,Cushion			
34	27270212	Spacer			
51	1A337701K	Front panel ass'y 			
	1A338701K	Front panel ass'y <S>			
52	28125226BY	End cap L			
53	28125227BY	End cap R			
58	28191617Y	Clear plate			
59	833430080	3TTP+8P(BC),Self-tapping screw			
60	28135199	Badge			
61	27175254	Leg			
62	834430088	3TTS+8B(BC),Self-tapping screw			
71	25060044	Terminal GND			
81	28324162Y	Knob LOUD 			
	28324177Y	Knob LOUD <S>			
82	28324150-1Y	Knob LEV 			
	28324151	Knob LEV <S>			
83	28324181	Knob VOL 			
	28324182	Knob VOL <S>			
85	28324140	Knob POW 			
	28324184	Knob POW <S>			

NOTE: THE COMPONENTS IDENTIFIED BY MARK △
ARE CRITICAL FOR RISK OF FIRE AND
ELECTRIC SHOCK. REPLACE ONLY WITH
PART NUMBER SPECIFIED.

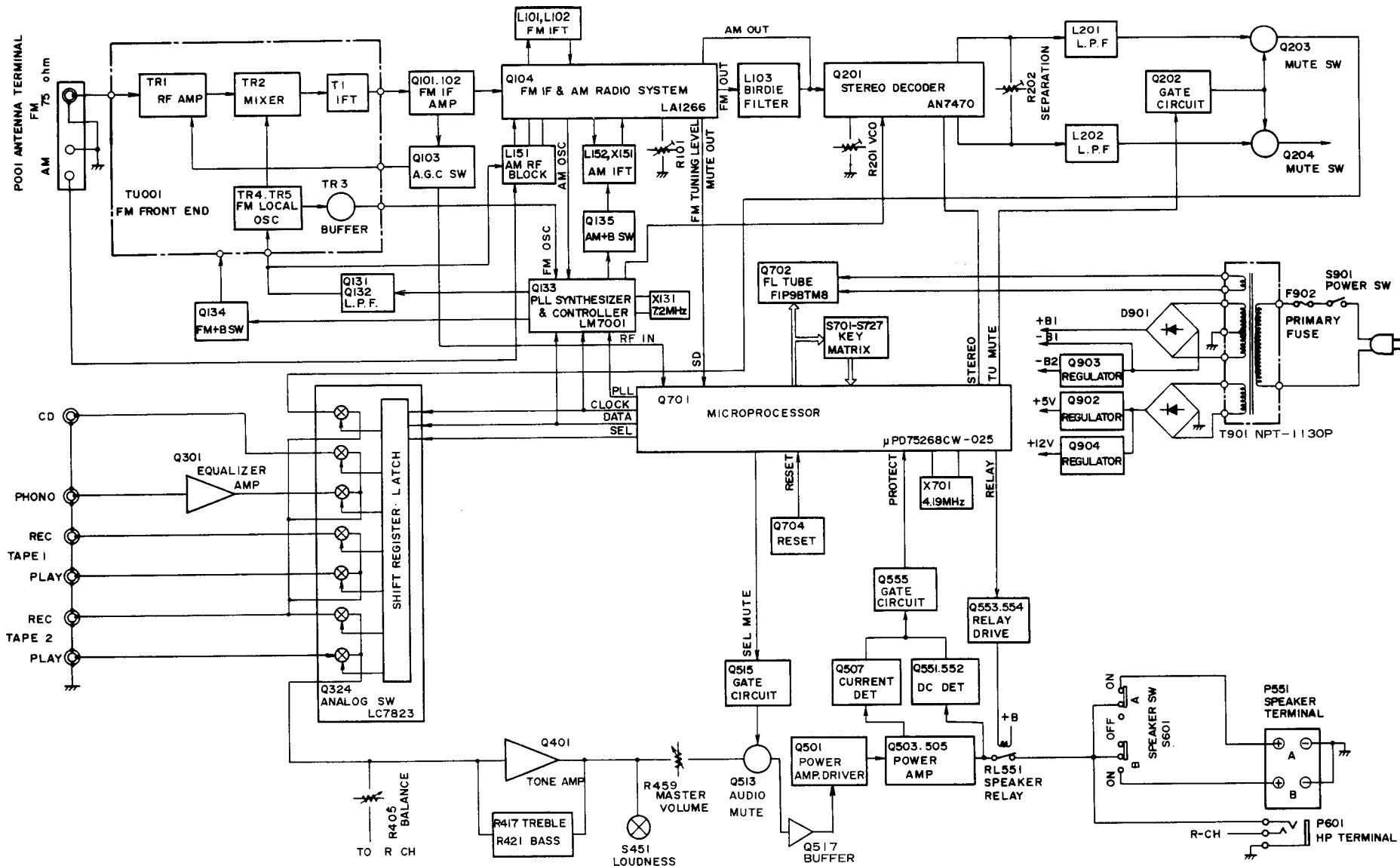
BLOCK DIAGRAM

MODEL TX-7920



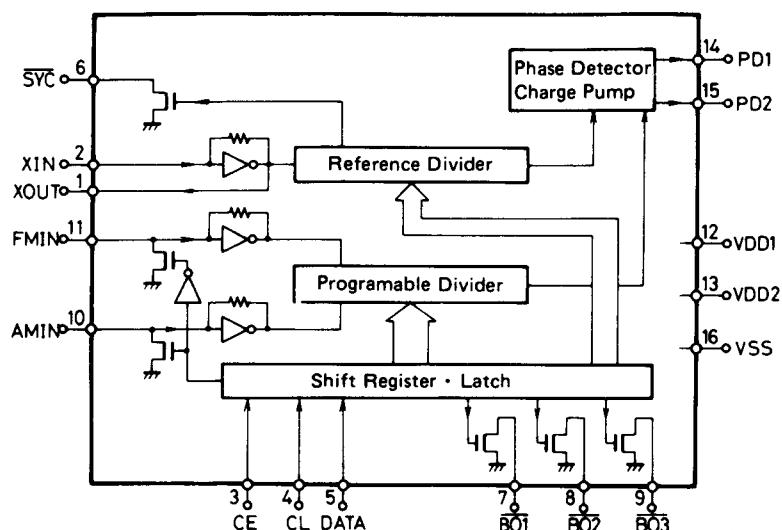
MODEL TX-7900

- 6 -

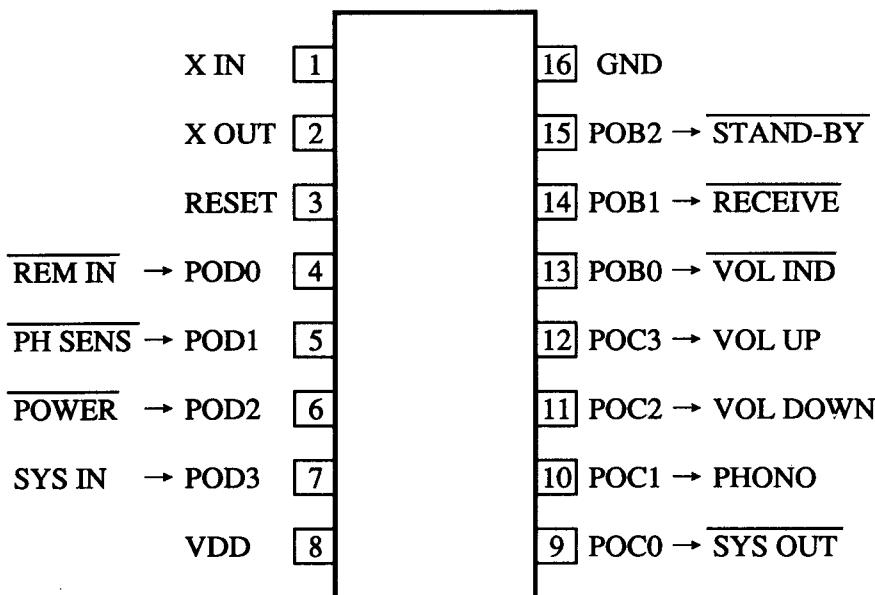
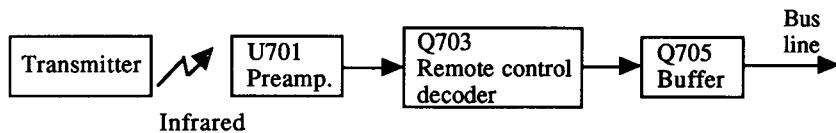


IC BLOCK DIAGRAM AND DESCRIPTION

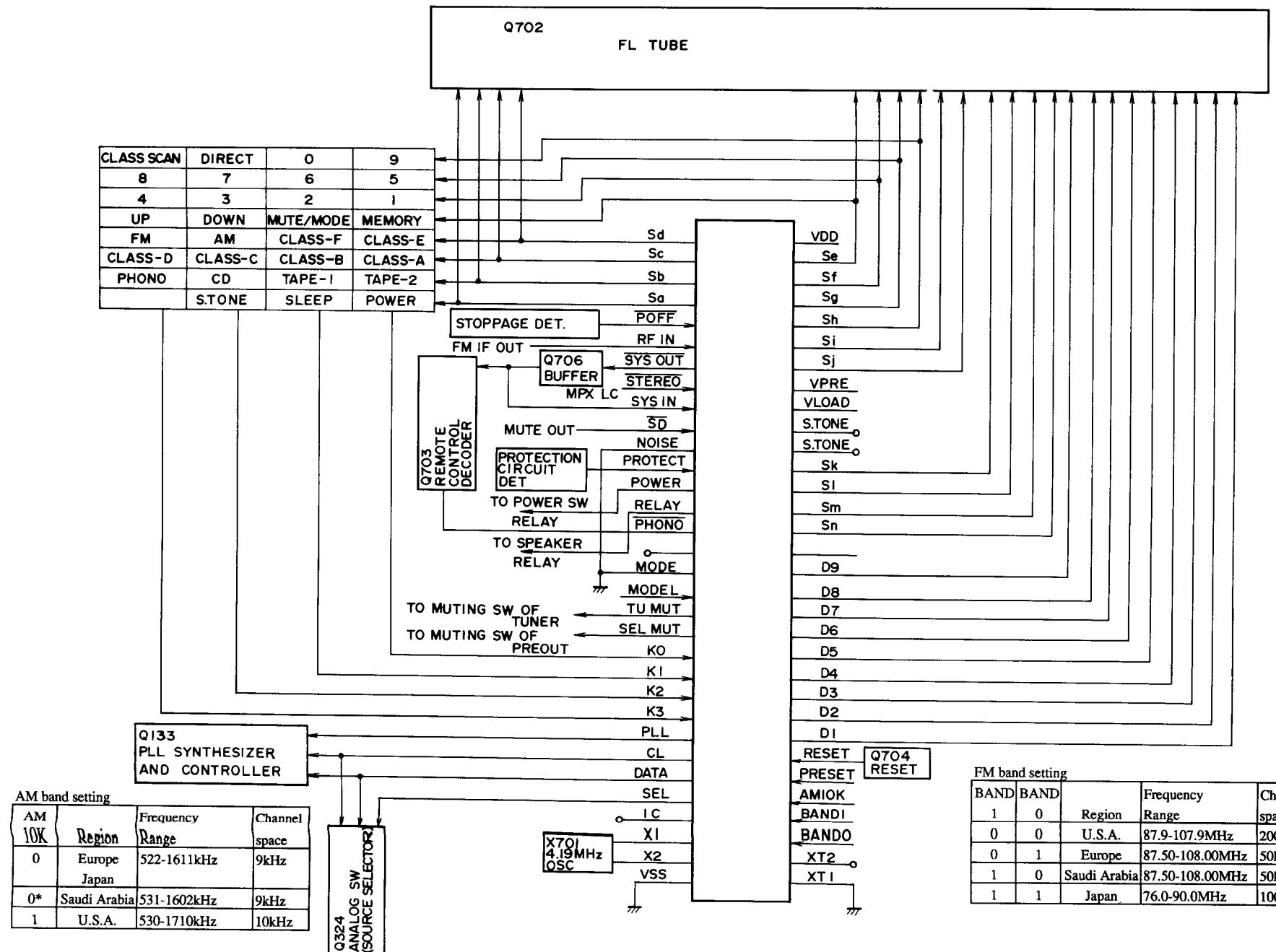
LM7001(PLL synthesizer and controller)



Pin No.	Terminal	Description
1	XOUT	
2	XIN	Connect to the 7.2 MHz crystal oscillator.
3	CE	Chip enable terminal. Connect to the PLL terminal of micro processor.
4	CL	Serial clock input terminal. Connect to the CLOCK terminal of micro processor.
5	DATA	Serial data input terminal. Connect to the DATA terminal of micro processor.
6	SYN	Not used.
7	AUTO/MONO	Auto/Mono control output terminal. "H" when Auto.
8	BO2	FM control signal output terminal. "L" when FM.
9	BO3	AM control signal output terminal. "L" when AM.
10	AMIN	AM local oscillator input terminal.
11	FMIN	FM local oscillator terminal.
12	VDD 1	Power supply terminal for back-up.
13	VDD 2	Power supply terminal.
14	PD1	Charge pump output of the phase detector which constitutes the PLL. High level is output when the divided local oscillator frequency is high than the reference frequency.
15	PD2	In the opposite case, low level is output. Floating occurs when the frequencies matched. The output is applied to the variable capacitor diode in the local oscillator through the low pass filters.
16	Vss	Ground terminal.

μ PD17103CX-528(Remote control decoder)**MODEL TX-7920**

Pin No.	Symbol	Terminal	Description
1	XIN	OSC	Connect to the 8.00MHz ceramic oscillator.
2	XOUT		
3	RES	RESET	System reset terminal. Active low.
4	POD0	REMOTE IN	Signal input terminal from preamp. for remote control. Active low.
5	POD1	PHONO SENSES	Phono detection input terminal. Active low.
6	POD2	POWER	Stand-by detection input terminal. During low input, only the POWER code is decoded.
7	POD3	SYS IN	System code input terminal.
8	V _{DD}	+B	Power supply terminal.
9	POC0	SYS OUT	Output at this terminal are the custom code (16bits) remote control code input to REMOTE IN, data code (8bits), and the serial code (12bits) that has been converted corresponding to the decoded data code (8bits)
10	POC1	PHONO	When the player PLAY/REEJECT is input, a high pulse of 200ms is output.
11	POC2	VOL DOWN	When the volume DOWN code is input, a high pulse of 120ms is output.
12	POC3	VOL UP	When the volume UP code is input, a high pulse of 120ms is output.
13	POB0	VOL IND	During the output of VOLUME UP/DOWN, a pulse (T T T T = 250ms) is output. (Not used.)
14	POB1	RECEIVE	This is the display output for remote control reception. Output is low when decoded code is being received.
15	POB2	STAND-BY	STAND-BY indication terminal.
16	V _{ss}	GND	Ground terminal.

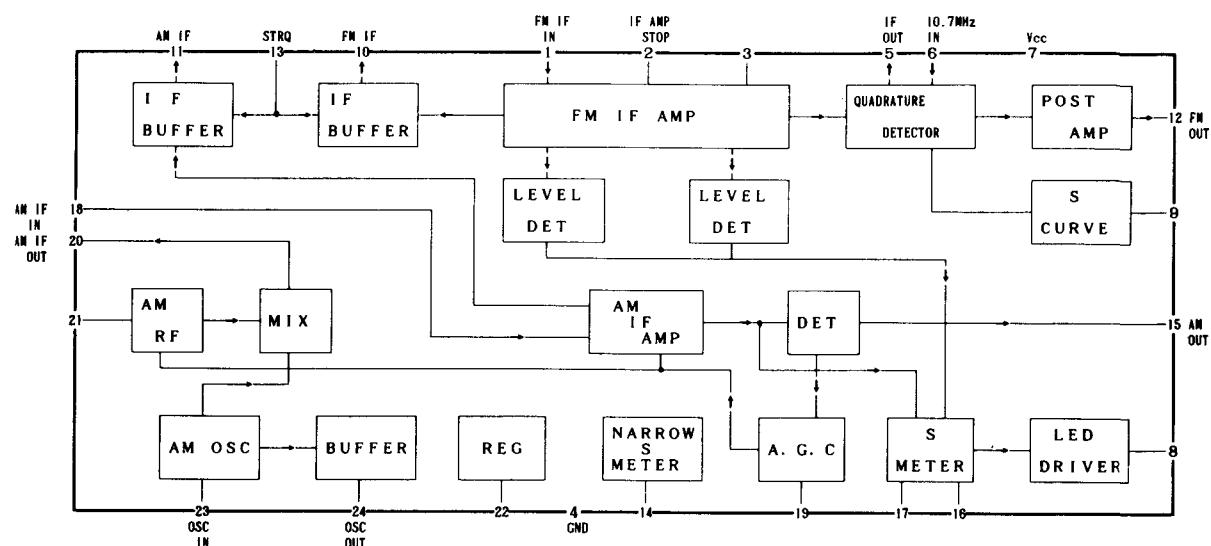
μ PD75268CW-025(Microprocessor)

TERMINAL DESCRIPTION

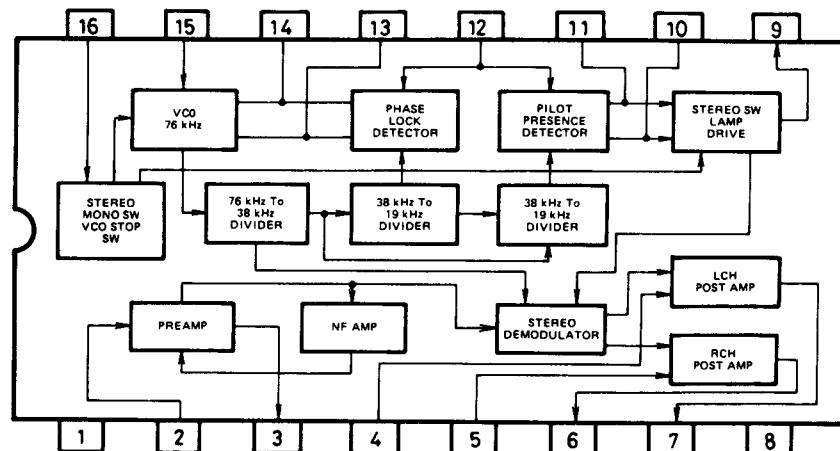
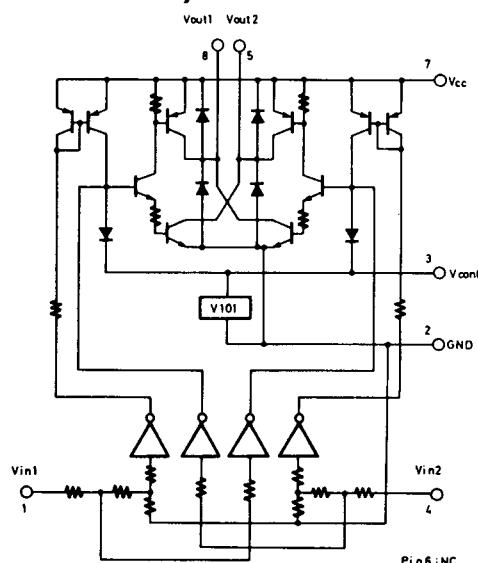
Pin No.	Symbol	Description						
1	Sd							
2	Sc	Segment and key scan output terminals. "H" when active.						
3	Sb							
4	Sa							
5	POFF	This is the input terminal for detection of the stoppage of electric current."L" when the stoppage of electric current.						
6	RF IN	RF mode input terminal. <table border="1" data-bbox="516 428 774 547"><tr><td>RF IN</td><td>RF MODE</td></tr><tr><td>L</td><td>LOCAL</td></tr><tr><td>H</td><td>DX</td></tr></table>	RF IN	RF MODE	L	LOCAL	H	DX
RF IN	RF MODE							
L	LOCAL							
H	DX							
7	SYS OUT/ SYS EN	System code output terminal."L" when active. Initializing input terminal when the power turns on.						
8	STEREO	Stereo broadcast detection input terminal. "L" when stereo broadcast.						
9	SYS IN	System code input terminal."H" when active.						
10	SD	Broadcast detection input terminal."L" when active. Control the stop of auto tuning and output TU MUT(#19).						
11	NOISE	Noise detection input terminal.Not used.						
12	PROTECT	Protection circuit operation detection input terminal.						
13	POWER	Power control output terminal.						
14	RELAY	Speaker relay control output terminal.						
15	PHONO	Phono control output terminal.						
16		Not used.						
17	MODE	Initializing input terminal for operation mode setting.						
18	MODEL	Initializing input terminal for model setting of receiver.						
19	TU MUT	Muting output terminal."H" when active.						
20	SEL MUT	Audio muting output terminal.Not used.						
21	K0							
22	K1	Key scan input terminals. "H" when active.						
23	K2							
24	K3							
25	PLL	Connect to the terminal CE of PLL IC (LM7001 Q133).						
26	CL	Connect to the terminal CL of PLL IC and analogue switch.						
27	DATA	Connect to the terminals DATA of PLL IC and analogue switch.						
28	SEL	Analog switch control output terminal. Connect to the terminal SEL of analogue switch(LC7823 Q324)						

Pin No.	Function	Description
29	IC	Internal connected.
30	X1	Ceramic oscillator connection terminal for main system clock.
31	X2	Connect to the 4.19MHz ceramic oscillator.
32	VSS	Ground terminal.
33	XT1	Ceramic oscillator connection terminal for sub system clock.
34	XT2	Not used.
35	BAND0	Initializing input terminal for region setting of FM band.
36	BAND1	
37	AM 10K	Initializing input terminal for region setting of AM band.
38	PRESET	Initializing input terminal for operation mode setting.
39	RESET	Reset input terminal."L" when active.
40	D1	
41	D2	
42	D3	
43	D4	
44	D5	Digit output terminals."H" when active.
45	D6	
46	D7	
47	D8	
48	D9	
49		Not used.
50	Sn	
51	Sm	Segment output terminals."H" when active.
52	Sl	
53	Sk	
54	S.TONE	SELECTIVE TONE indication output terminal.Not used.
55	S.TONE	SELECTIVE TONE control output terminal.Not used.
56	VLOAD	Pull-down resistor connection terminal of FIP controller/driver.
57	VPRE	Power supply terminal of output buffer of FIP controller/driver.
58	Si	
59	Si	
60	Sh	Segment and key scan output terminals. "H" when active.
61	Sg	
62	Sf	
63	Se	
64	VDD	Power supply terminal.(+5V)

LA1266(FM IF and AM radio system)



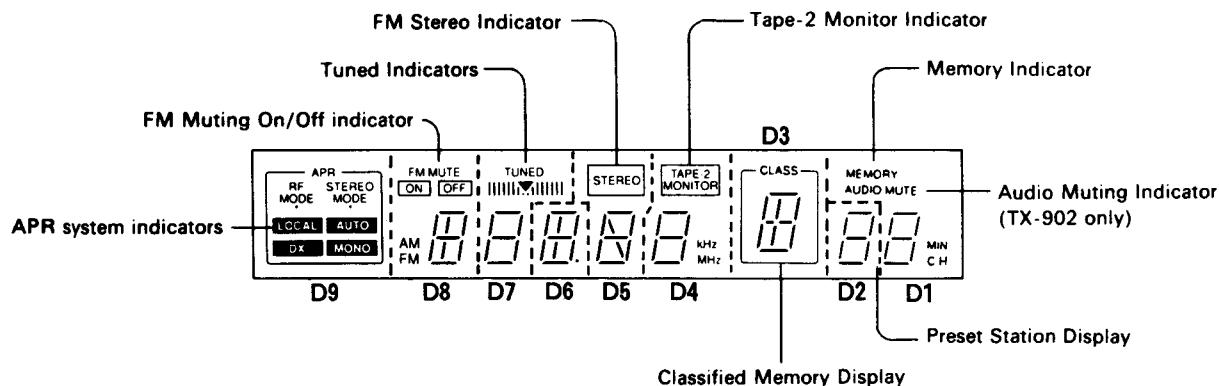
AN7470(Stereo decoder)

LB1630(Motor driver)
(MODEL TX-7920)

TRUTH TABLE

IN 1	IN 2	OUT 1	OUT 2	MOTOR
H	L	H	L	Nominal
L	H	L	H	Reverse
H	H	OFF	OFF	Wat
L	L	OFF	OFF	Wat

FIP9BTM8(Fluorescent tube)

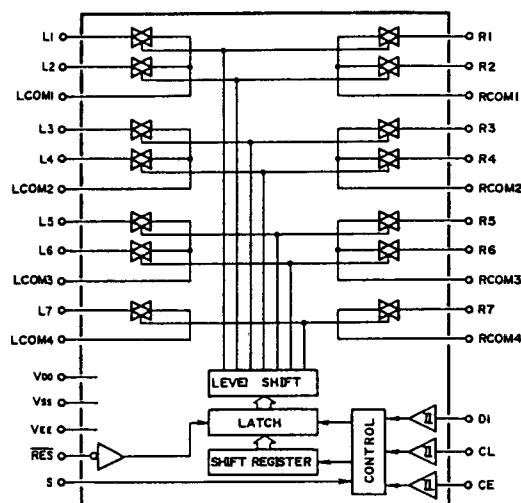


Terminal No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Electrode	F	F	NP	9G	NP	NP	NP	NP	NP	9G	NP	8G	NP	NP	8G	P(n)
Terminal No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Electrode	7G	7G	P(m)	6G	6G	P(l)	P(k)	5G	P(j)	P(i)	4G	P(h)	NP	4G	P(g)	
Terminal No.	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	
Electrode	3G	P(f)	P(e)	3G	P(a)	2G	2G	P(b)	1G	P(c)	P(d)	1G	NP	F	F	

Note: F:Filament
G:Grid
P:Anode
NP:No pin

	D9	D8	D7	D6	D5	D4	D3	D2	D1
Sa	APR	a	a	a	a	a	a	a	a
Sb	STEREO MODE	b	b	b	b	b	b	b	b
Sc	AUTO	c	c	c	c	c	c	c	c
Sd	MONO	d	d	d	d	d	d	d	d
Se	DX	e	e	e	e	e	e	e	e
Sf	LOCAL	f	f	f	f	f	f	f	f
Sg	RF MODE	g	g	g	g	g	g	g	g
Sh					h				
Si		i		i			i		
Sj		FM MUTE	TUNED		STEREO	TAPE-2	CLASS		MEMORY
Sk		ON	▼ (TUNED)				k		SLEEP
Sl		OFF							AUDIO MUTE
Sm		AM				kHz			MIN
Sn		FM				MHz			CH

LC7823/LC7823N(Analog switch)



Serial Data Composition

CIRCUIT NO	PART NAME	A0	A1	A2	A3	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
Q310	LC7823-N	0	1	1	1								
Q312	LC7821-N	1	1	0	1								
Q313	LC7823-N	1	1	1	1								
Q693	LC7822-N	0	0	1	1								
Q694	LC7822-N	1	0	1	1								

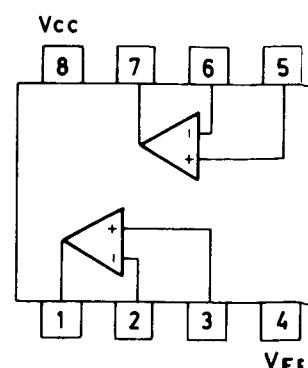
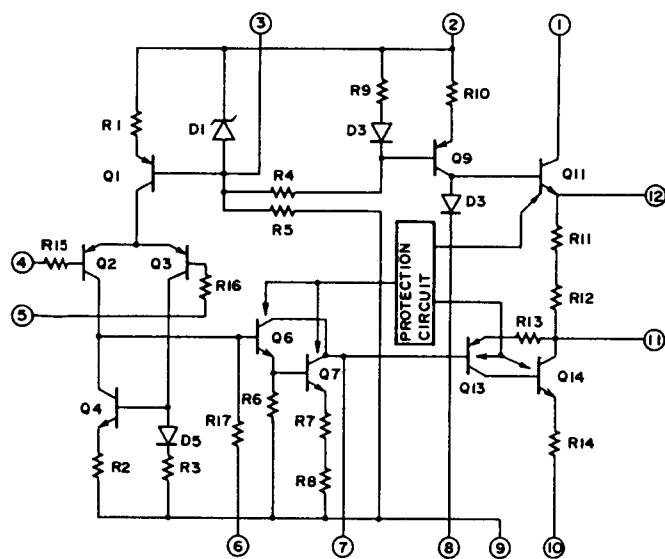
SWITCHING CHANGEOVER

ADDRESS

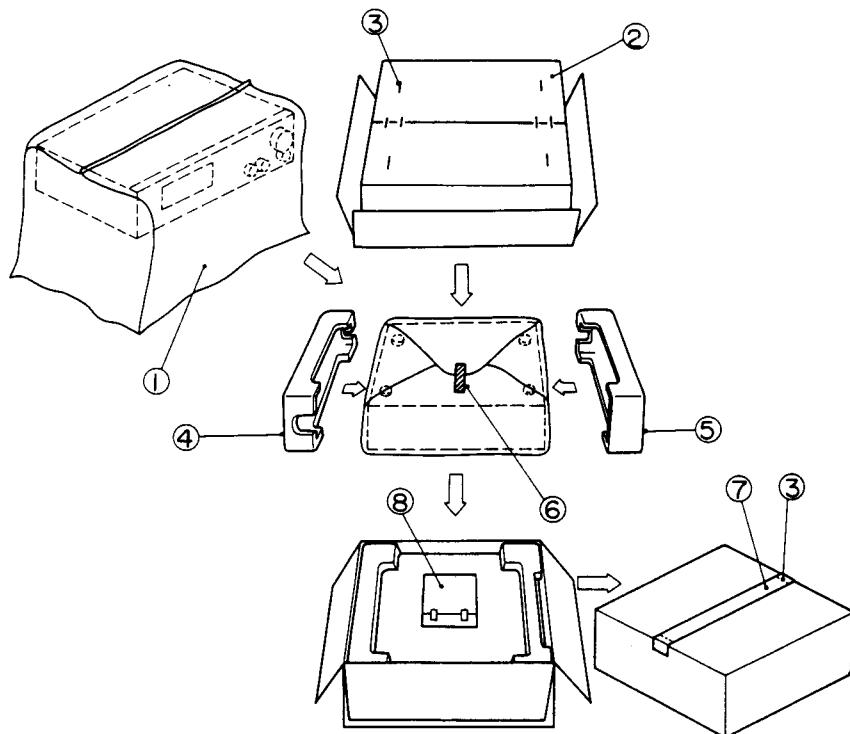
Pin No.	Terminal	Description
1,30	CD	On when the input selector is CD.
2,29	PHONO	On when the input selector is PHONO.
3,28	LCOM1,RCOM1	Common terminal.
4,27	TAPE-1 REC	Off when the input selector is TAPE-1.
5,26	TAPE-1 PB	On when the input selector is TAPE-1.
6,25	LCOM2,RCOM2	Common terminal.
7,24	TAPE-2 REC	Off when the input selector is TAPE-2.
8,23	TAPE-2 PB	On when the input selector is TAPE-2.
9,22	LCOM3,RCOM3	Common terminal.
10,21	TUNER	On when the input selector is TUNER.
11,20	LCOM4,RCOM4	Common terminal.
12	VEE	Negative power supply terminal.(-15V)
13	CE	Chip enable terminal. Connect to the terminal FUNC of the microprocessor.
14	DI	Serial data input terminal. Connect to the terminal DATA of the microprocessor.
15	CL	Serial clock terminal. Connect to the terminal CL of the microprocessor.
16	Vss	Ground terminal.
17	S	Select terminal.
18	RES	Reset terminal.
19	VDD	Power supply terminal.(+5V)

 μ PC1225H(Power amplifier driver)

NJM4558D-X(Operation amplifier)



PACKING VIEW



TX-7920

REF.NO.	PART NO.	DESCIRPION
1	29052331Y	Master carton box
	29052332Y	Master carton box <S>
2	29091440AY	Pad L
3	29091441AY	Pad R
4	29100034A	850×650,Styrene bag
5	282301	Sealing hook
6	29110071	Dampion tape
7	261504	Adhesive tape
8	Accessory bag ass'y	
	29341685Y	Instruction manual
	29100097	350×250,Styrene bag
	292112Y	FM antenna
	232140	NMA-3057,AM loop antenna
	29365020E	Warranty card
	29100094A	Styrene bag for warranty card
	3010165Y	UM-3,Two batteries
	24140223Y	RC-223S,Remote control unit
	2010200	Cord RI

TX-7900

REF.NO.	PART NO.	DESCIRPION
1	29052334Y	Master carton box
	29052335Y	Master carton box <S>
2	29091440AY	Pad L
3	29091441AY	Pad R
4	29100034A	850×650,Styrene bag
5	282301	Sealing hook
6	29110071	Dampion tape
7	261504	Adhesive tape
8	Accessory bag ass'y	
	29341685Y	Instruction manual
	29100097	350×250,Styrene bag
	292112Y	FM antenna
	232140	NMA-3057,AM loop antenna
	29365020E	Warranty card
	29100094A	Styrene bag for warranty card

NOTE: :Black model only
<S>:Silver model only

ADJUSTMENT PROCEDURES

Preparation

1. Input

FM mono: 1kHz, 75kHz devi., 60dB/ μ V

FM stereo: 1kHz, 75kHz devi., 60dB/ μ V

Pilot signal 19kHz 7.5kHz devi.

AM: 400Hz 30% mod.

2. Outputs

Connect the non-inductive type resistors of 8 ohms to the speaker terminals A unless otherwise noted.

3. Standard Knob Position

VOLUME.....Maximum

BASS/TREBLE/BALANCE.....Center

MUTING/LOUDNESS.....Off

INPUT SELECTOR.....CD

SPEAKERS.....A

Confirming Operation

1. Protection circuit

a. Speaker relay

The speaker relay turns on after the power switch turned on for 5 minutes.

The speaker relay turns off immediately after the power switch turns off.

b. Over-voltage confirmation

The speaker relay is off immediately after DC voltage $\pm 6V$ is applied to the terminal CD.

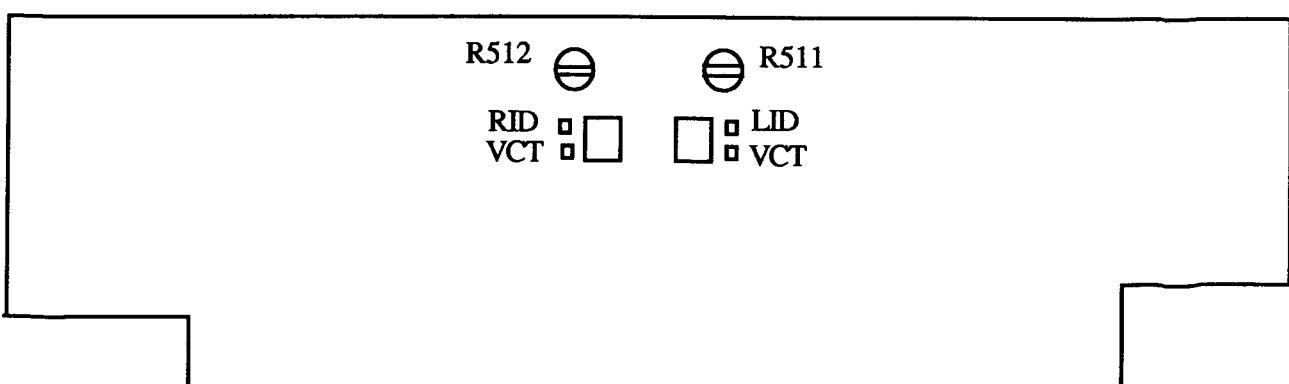
Amplifier section

Idling Current Adjustment

Connect the DC voltmeter to the terminals LID(RID) and CT on the power amplifier pc board.

Adjust the semi-fixed resistor R511(R512) so that the indication of voltmeter is $5 \pm 0.5mV$.

Note: () : Right channel

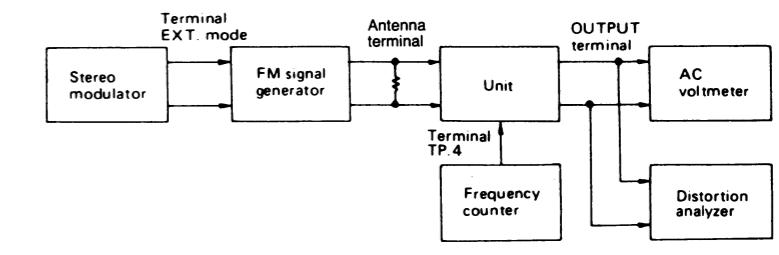
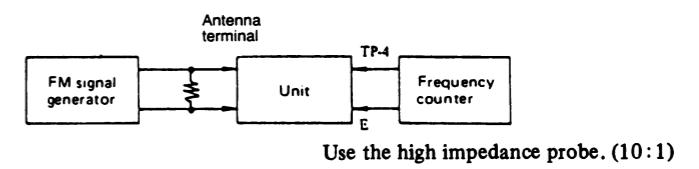
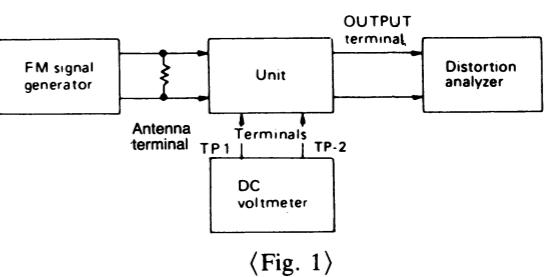


POWER AMPLIFIER PC BOARD

SOLDERING SIDE

FM section

Item	Step	Connection of instrument	FM SG output	Stereo modulator output	Tuned frequency	Output indicator	Adjustment point	Adjust for	Remarks
I F	1	Fig. 1	99.1MHz 1kHz,75kHz devi. 65dBf(60dB)	—	99.1MHz	DC voltmeter	L101	$0 \pm 20mV$	Set the FM mode switch to MONO. Repeat the steps 1 and 2 until no further adjustment is necessary.
	2					Distortion analyzer	L102	Minimum	
V C O		Fig. 2	99.1MHz 1kHz,75kHz devi. 65dBf(60dB)	—	99.1MHz	Frequency counter	R201	$19kHz \pm 10Hz$	Set the FM mode switch to AUTO.
Stereo distortion		Fig. 3	99.1MHz Ext. modulation 65dBf(60dB)	L+R 1kHz 67.5kHz devi.	99.1MHz	Distortion analyzer	IF on front end	Minimum	
Stereo separation	1	Fig. 3	99.1MHz Ext. modulation 65dBf(60dB)	Lch. 1kHz	99.1MHz	Rch. AC voltmeter	R202	Minimum	Maximum and same separation
	2			Rch. 1kHz		Lch. AC voltmeter		Minimum	
Tuned indicator level	1	Fig. 3	99.1MHz 1kHz, 75kHz devi. 17.2dBf(12dB)	—	99.1MHz	TUNED indicator	R101	Light on	
	2		99.1MHz 1kHz, 75kHz devi. 16.2dBf(11dB)	—				Light off	

**AM section**

Step	AM SG output	Tuned Frequency	Output indicator	Adjustment point	Adjust for
1	—	522kHz	Digital DC voltmeter	OSC coil on RF block (L151)	$1.5 \pm 0.1V$
2	603kHz, 60dB/m 400Hz 30% mod.	603kHz	A C voltmeter	RF coil on RF block (L151)	Maximum
3	990kHz, 60dB/m 400Hz 30% mod.	990kHz	A C voltmeter	L152	Maximum

Reference specifications

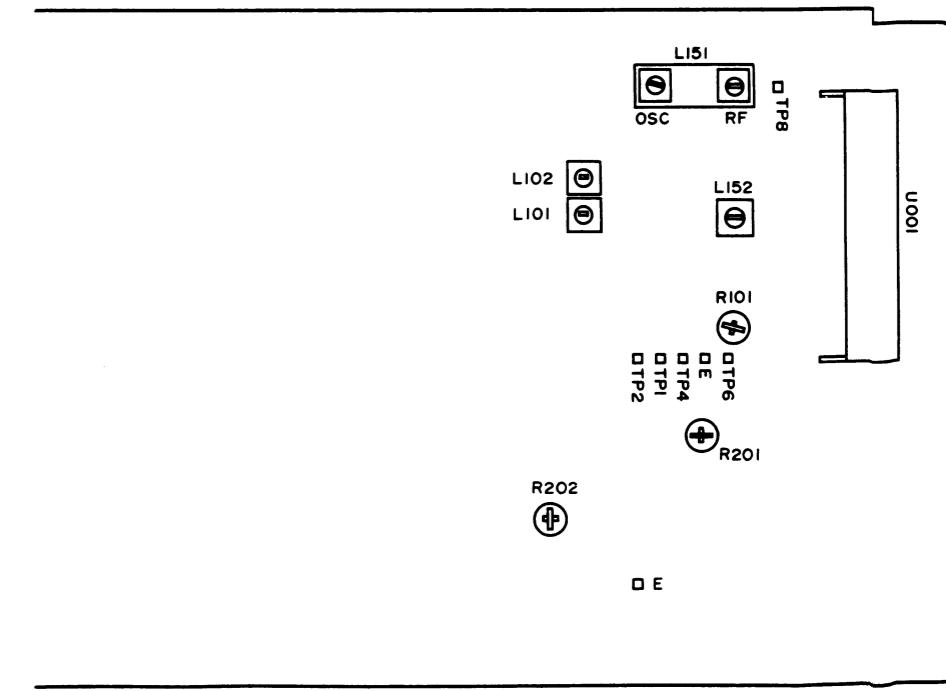
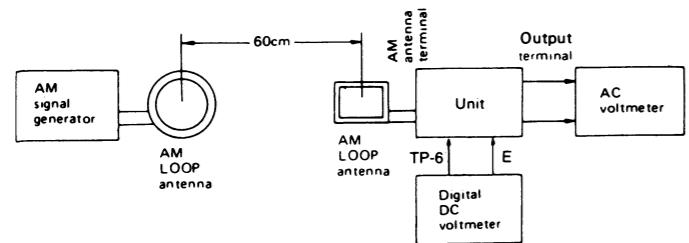
Tuned voltage AM 522kHz $1.5 \pm 0.4V$
(Connet Digital 1611kHz $7.5 \pm 0.5V$
DC voltmeter to FM 87.50MHz $2.0 \pm 0.5V$
test point TP-6) 108.0MHz $7.5 \pm 0.5V$

Muting width $35 \pm 10kHz$

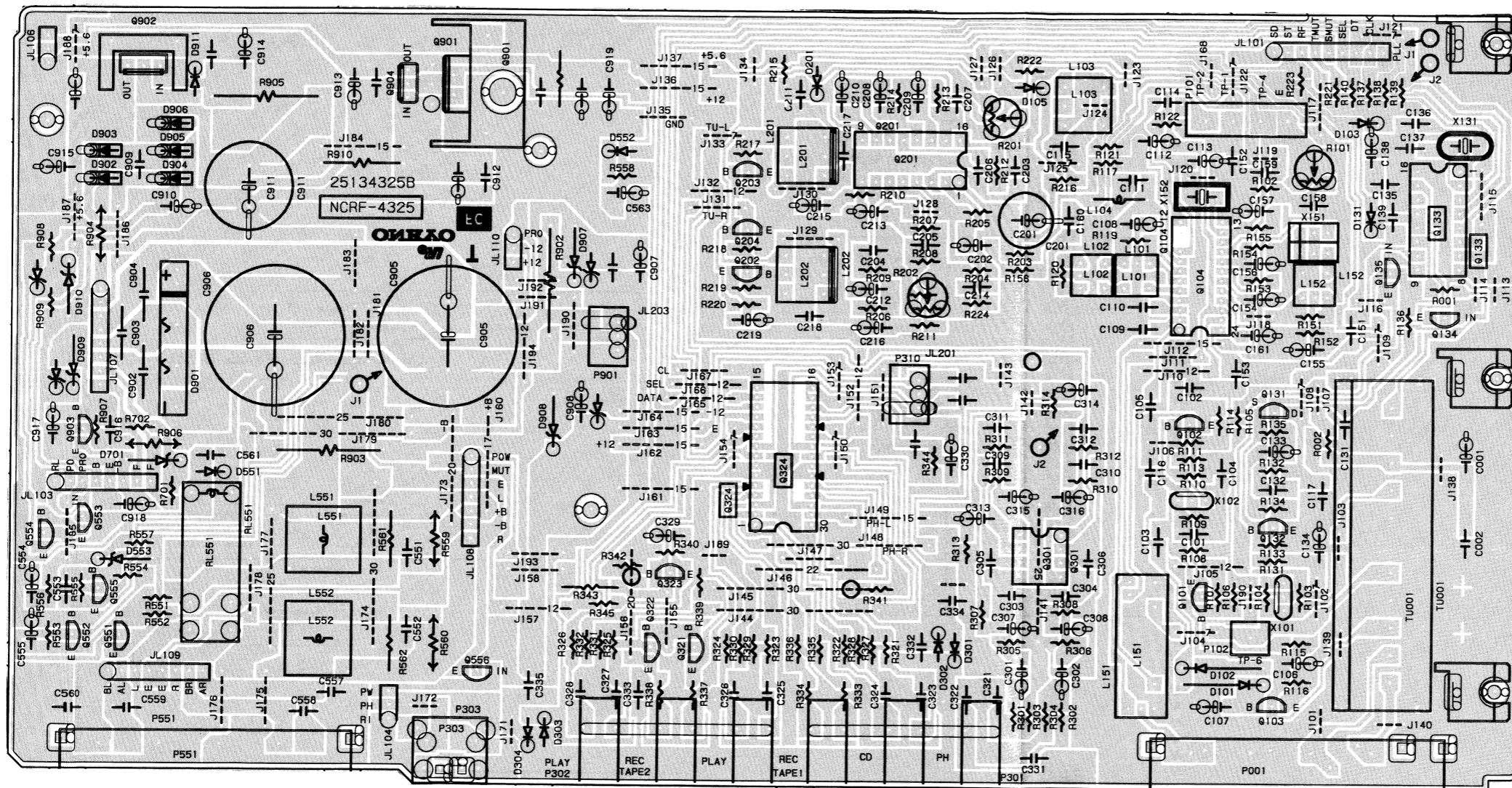
Muting level FM $12 \pm 3dB$

Auto stop level AM Less than 68dB/m
FM Less than 20dB μ

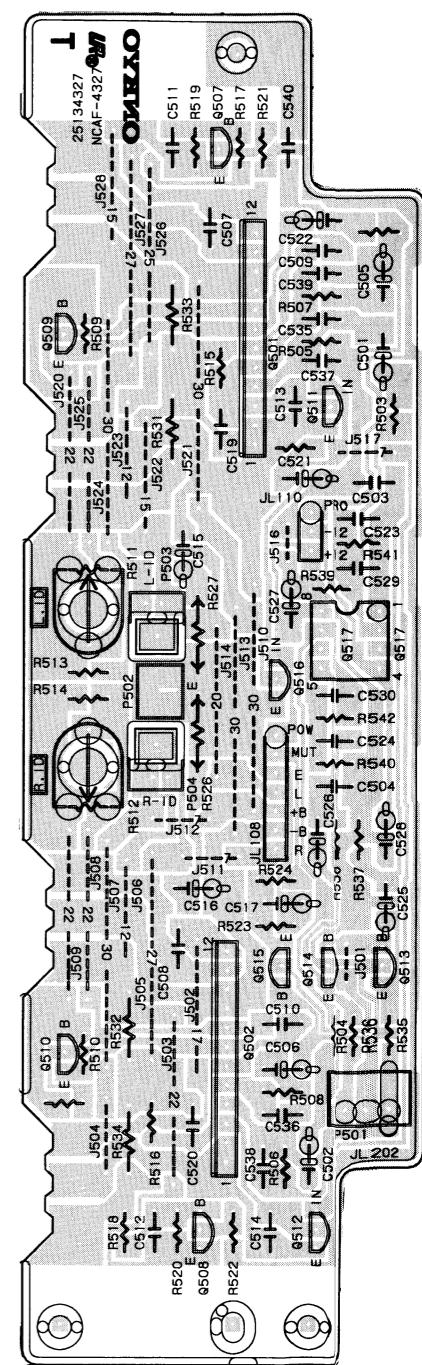
Stereo indicator level $14 \pm 4dB\mu$



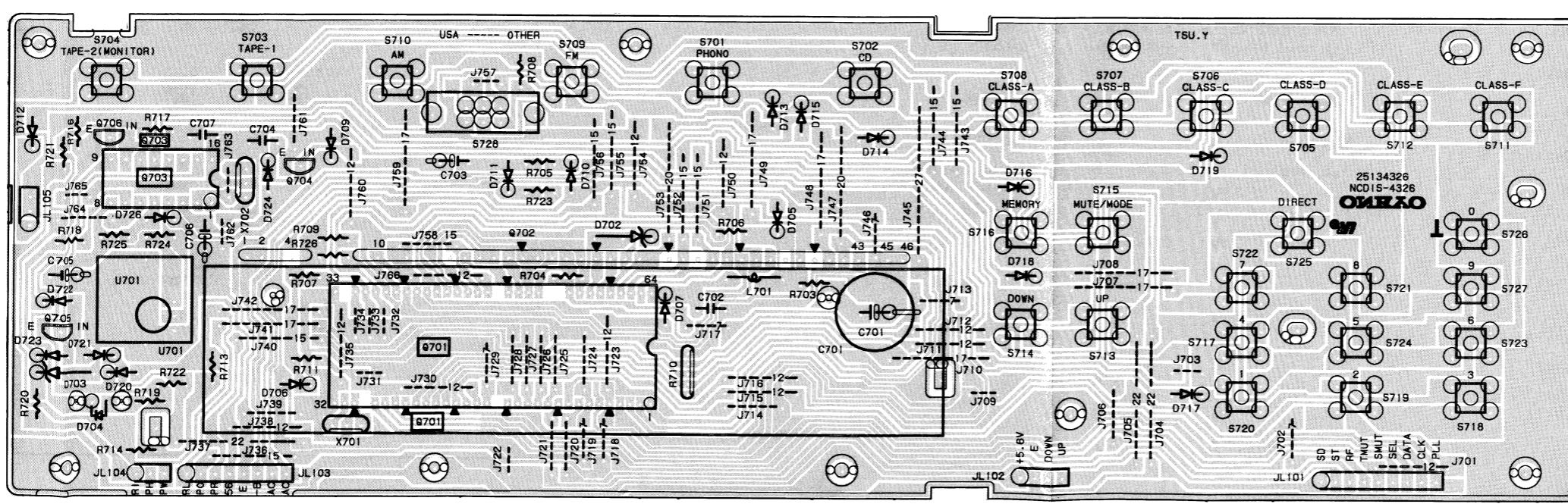
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



TUNER CIRCUIT PC BOAS



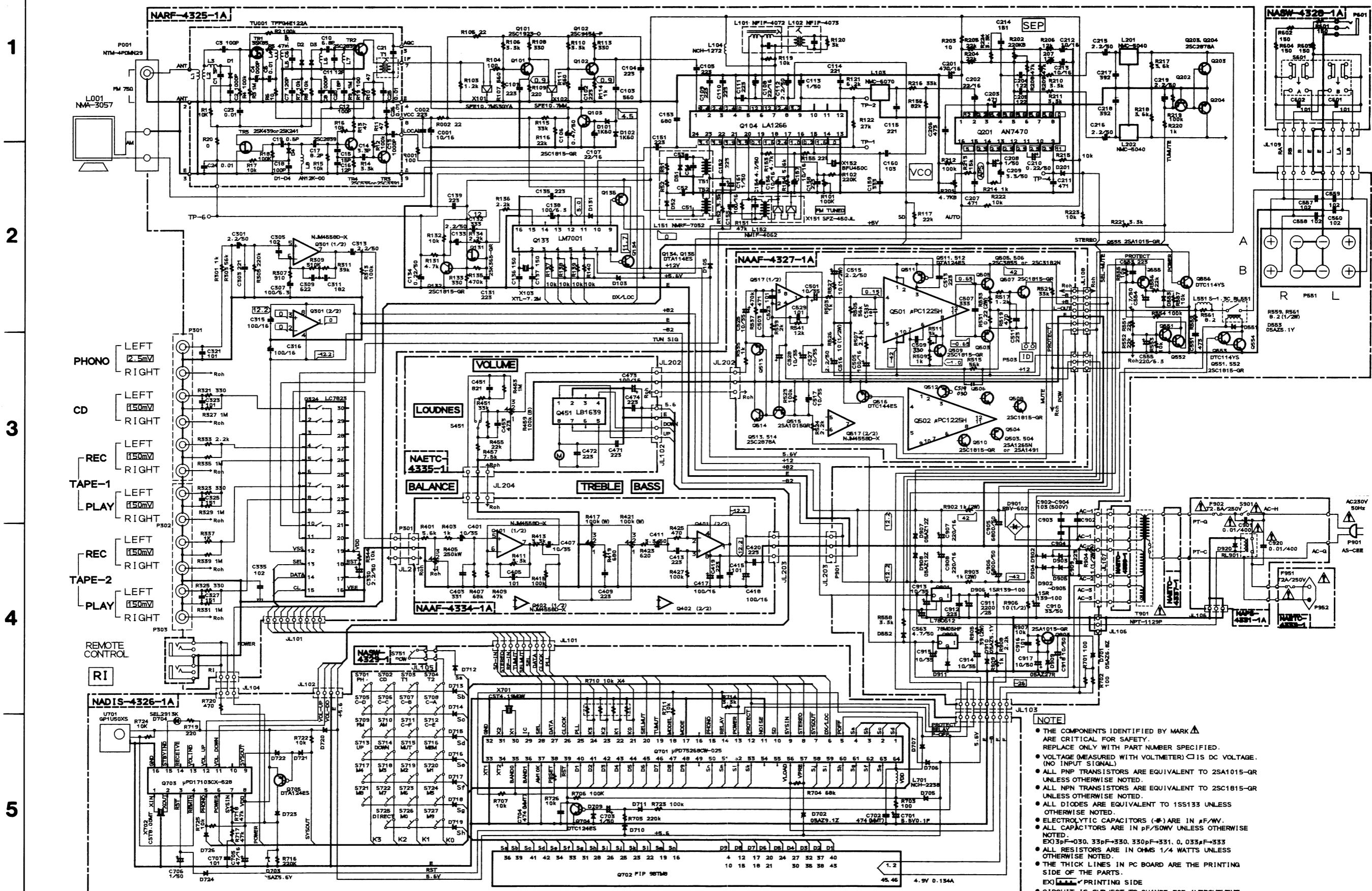
POWER AMPLIFIER CIRCUIT PC BOARD



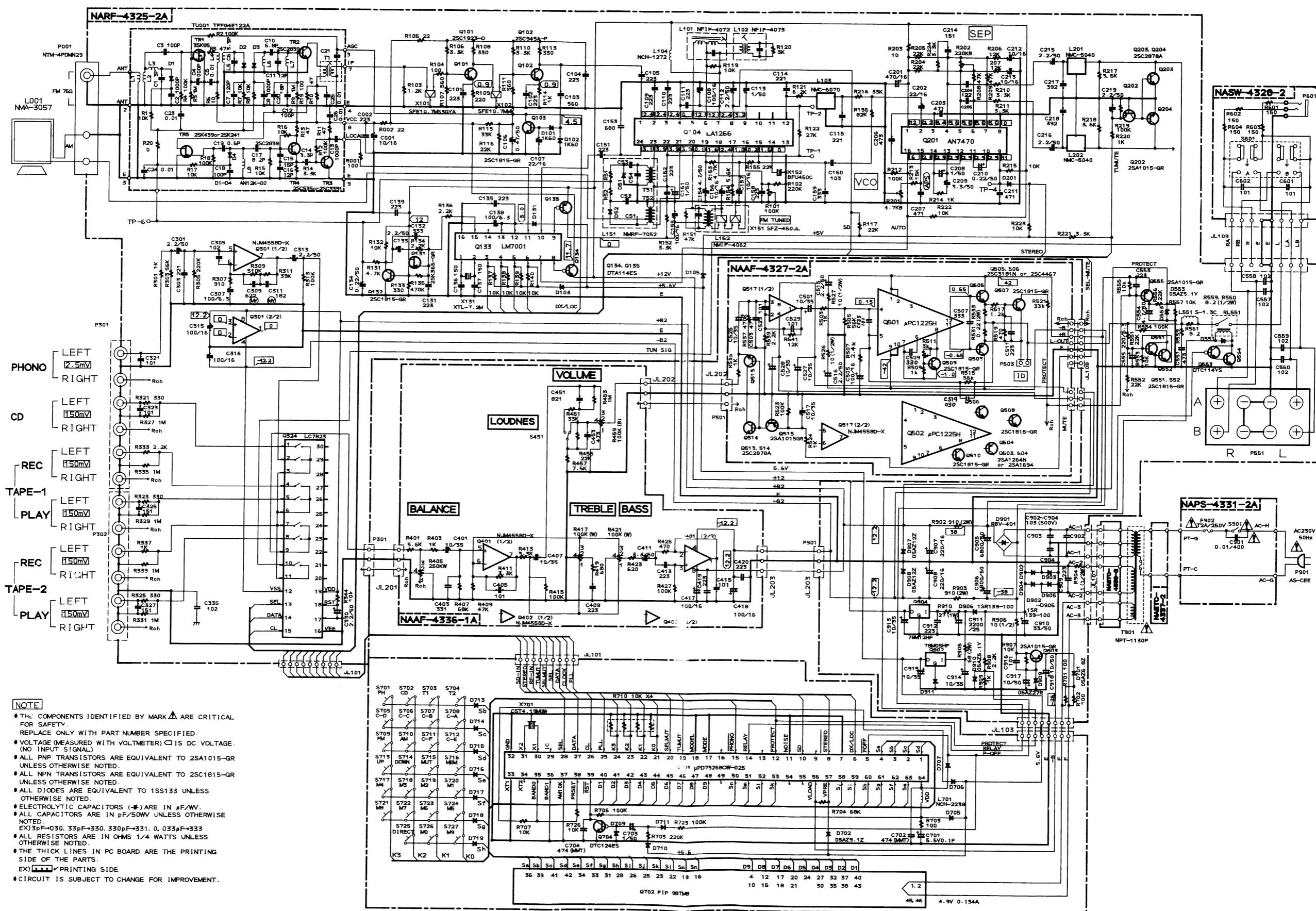
DISPLAY CIRCUIT PC BOARD

A **B** **C** **D** **E** **F** **G**

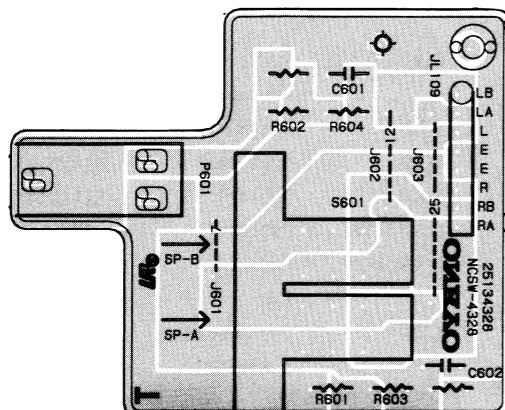
SCHEMATIC DIAGRAM
MODEL TX-7920



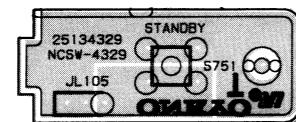
SCHEMATIC DIAGRAM



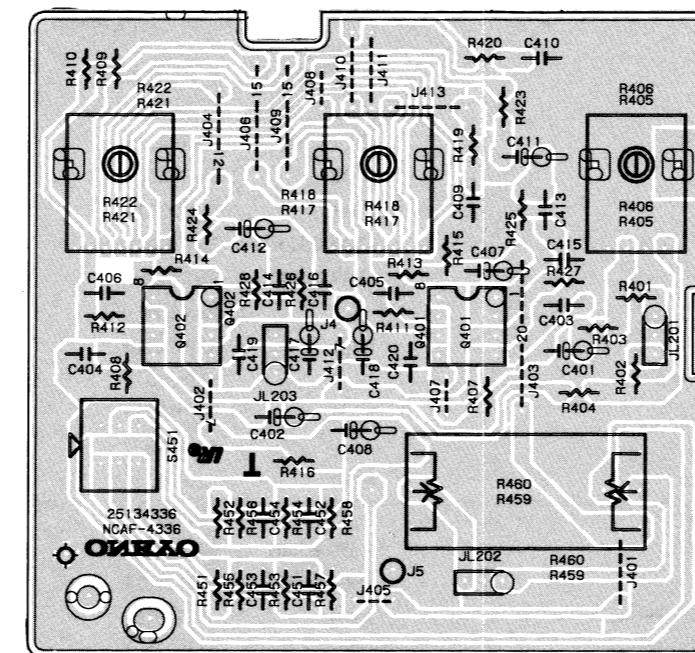
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



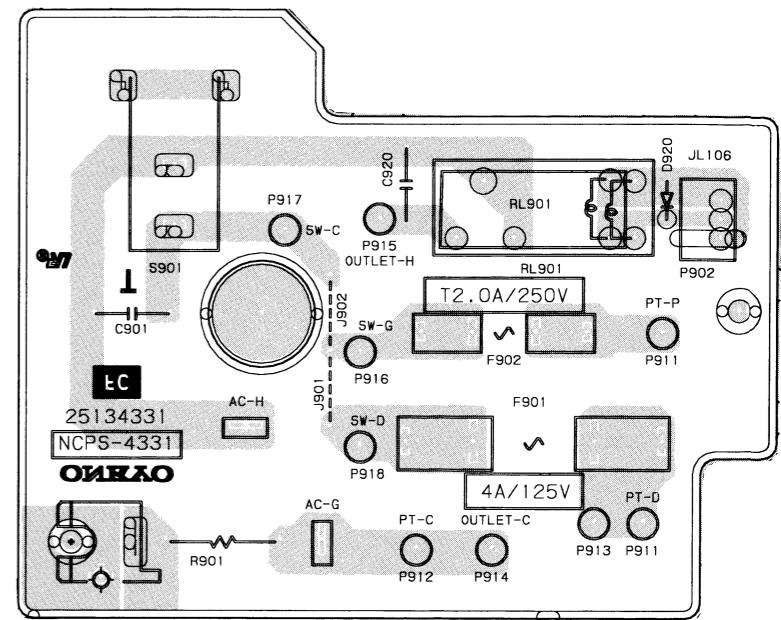
HEADPHONE TERMINAL PC BOARD



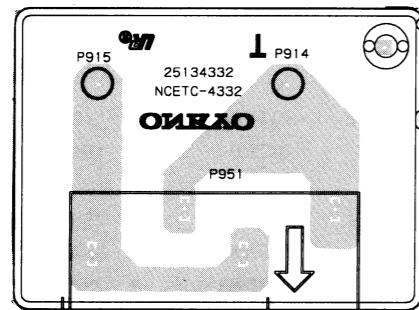
POWER SWITCH PC BOARD (Only Model TX-7920)



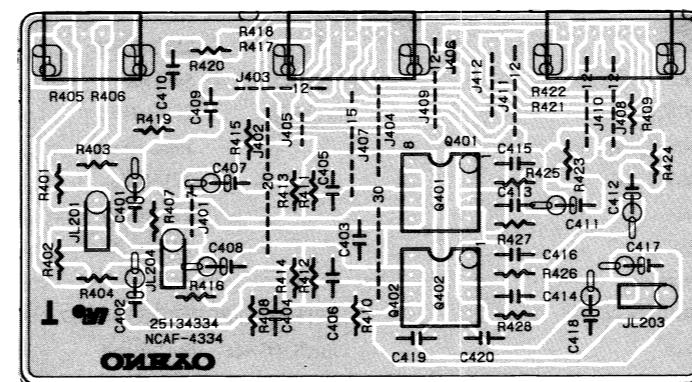
TONE CONTROL CIRCUIT PC BOARD (Only Model TX-7900)



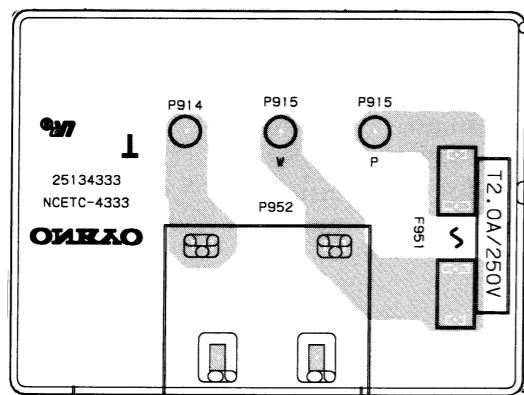
POWER SUPPLY CIRCUIT PC BOARD



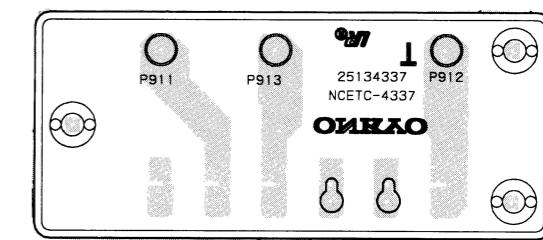
AC OUTLET PC BOARD



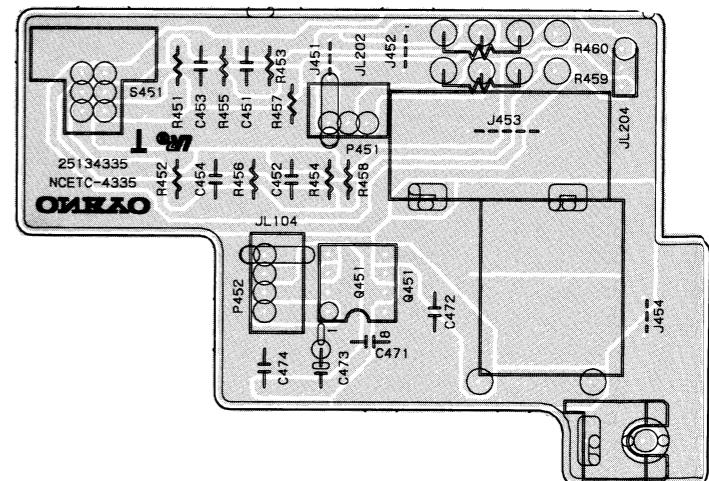
TONE CONTROL CIRCUIT PC BOARD
(Only Model TX-7920)



AC OUTLET PC BOARD



TERMINAL PC BOARD



VOLUME CONTROL PC BOARD (Only Model TX-7920)

PRINTED CIRCUIT BOARD-PARTS LIST

MODEL TX-7920

TUNER CIRCUIT PC BOARD (NARF-4325-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
Front end											
TU001	240085	TFFG4E122A	X101	3010081	SFE10.7MS3GYA	C907,C908	354742219	220 μ F,16V,Elect.	D702	224150913	05AZ9.1Z
	ICs		X102	3010137	SFE10.7MMK	C910	354783309	33 μ F,50V,Elect.	D703	224150562	05AZ5.6Y
Q104	22240039	LA1266	X151	3010123	SFZ450JL	C911	354752229	2200 μ F,25V,Elect.	D704	225142	SEL2913K,L.E.D.
Q133	22240090	LM7001	X152	3010076	BFU450C	C913-C915	354761009	10 μ F,35V,Elect.	D705-D707	223163	1SS133
Q201	22240242	AN7470		Crystal		C917,C918	354781009	10 μ F,50V,Elect.	D709-D724	223163	1SS133
Q301	222502	NJM4558D-X	X131	3010158	XTL-7.2M		Resistors			Coil	
Q324	22240158 or	LC7823 or		Relay		R101	5210221 or	N06HR100KBD	L701	233400M220 or	NCH-2238 or
	22240339	LC7823N	RL551	25065339	NRL-2P5ADC24-046		5210070	Semi-fixed		233409K220	NCH-1284
Q901	222780126Y	L78OS12		Capacitors		R201	5210216 or	N06HR5KBD or		Capacitors	
Q902	222780055	78M05HF	C001	354761009	10 μ F,35V,Elect.		5210062	N06HR4.7KBD ,Semi-fixed	C701	3000057	0.1F,5.5V,Super
	Transistors		C106	354784799	0.47 μ F,50V,Elect.	R202	5210222 or	N06HR200KBD or	C702,C704	375524744	0.47 μ F \pm 5%,50V,Plastic
Q101	2211723	2SC1923-O	C107,C108	354742209	22 μ F,16V,Elect.		5210072	N06HR220KBD,Semi-fixed	C703	353780229	2.2 μ F,50V,Elect.
Q102	2210746	2SC945A-P	C112,C133	354780229	2.2 μ F,50V,Elect.	R559,R560	442520824	8.2ohm,1/2W,Metal oxide film	C705	353744709	47 μ F,16V,Elect.
Q103,Q132	2211255	2SC1815-GR	C113	354780109	1 μ F,50V,Elect.	R902,R903	441721024	1kohm,2W,Metal oxide film	C706	353780109	1 μ F,50V,Elect.
Q131	2212445	2SK365-GR	C131	374722234	0.022 μ F \pm 5%,50V,Plastic	R904	442520104	1ohm,1/2W,Metal oxide film		Resistor	
Q134,Q135	2213510	DTA114ES	C132,C159	374723334	0.033 μ F \pm 5%,50V,Plastic	R905	441723904	39ohm,2W,Metal oxide film	R710	49163103404	10kohm \times 4,1/10W,Array
Q202,Q555	2211455	2SA1015-GR	C134,C210	353782299	0.22 μ F,50V,Elect.	R906	442521004	10ohm,1/2W,Metal oxide film		Switches	
Q203,Q204	2212285	2SC2878-A	C138	354721019	100 μ F,6.3V,Elect.		Terminals		S701-S727	25035548	NPS-111-S510
Q551,Q552	2211255	2SC1815-GR	C154,C554	354780479	4.7 μ F,50V,Elect.	P001	25060117Y	NTM-2PDML051,Antenna		Holders	
Q553,Q556	221281	DTC114YS	C155	354741019	100 μ F,16V,Elect.	P101	25060064	4P-5		27190810Y	FL
Q554	2211255	2SC1815-GR	C156,C157	354761009	10 μ F,35V,Elect.	P102	25060061	1P-5		27190811Y	LED
Q903	2211455	2SA1015-GR	C160	374721034	0.01 μ F \pm 5%,50V,Plastic	P301,P302	25045323Y	NPJ-6PDML180			
	Diodes		C161,C208	354780109	1 μ F,50V,Elect.	P303	25045172	HSJ1003-01-020			
D101,D102	223132	1K60	C201	354744719	470 μ F,16V,Elect.	P551	25060158Y	NTM-8PDML084,Speaker			
D103,D105	223163	1SS133	C202	354742209	22 μ F,16V,Elect.		Sockets				
D131,D201	223163	1SS133	C204,C205	374721224	1200pF \pm 5%,50V,Plastic	P310,P901	25050267	NSCT-3P95	Q501,Q502	22240108	μ PC1225H
D551,D552	223163	1SS133	C206	374724734	0.047 μ F \pm 5%,50V,Plastic		Radiators		Q517	222502	NJM4558D-X
D553	224150512	05AZ5.1Y	C207	370134714	470pF \pm 5%,100V,Plastic		27160145	RAD-51			Transistors
D701	224150683	05AZ6.8Z	C209	354780339	3.3 μ F,50V,Elect.		27160166		Q503,Q504	2202282,	* 2SA1265N-R,
D901	22380038	RBV602	C212,C213	354761009	10 μ F,35V,Elect.		27160176	RAD-56		2202283,	* 2SA1265N-O,
D902-D906	22380032	1SR139-100	C215,C216	354780229	2.2 μ F,50V,Elect.					2201693	* 2SA1491-O,
D907,D908	224151203	05AZ12Z	C217,C218	374723924	3900pF \pm 5%,50V,Plastic					2201694 or	* 2SA1491-Y or
D909	224152704	05AZ27R	C219	354780229	2.2 μ F,50V,Elect.					2201696	* 2SA1491-P
D910	224150512	05AZ5.1Y	C301,C302	354780229	2.2 μ F,50V,Elect.					2202292,	* 2SC3182N-R,
D911	223163	1SS133	C307,C308	354721019	100 μ F,6.3V,Elect.					2202293,	* 2SC3182N-O,
	Coils		C309,C310	374726224	6200pF \pm 5%,50V,Plastic					2201703	* 2SC3855-O,
L103	233383	NMC-6070	C311,C312	374721824	1800pF \pm 5%,50V,Plastic	Q701	22240406Y	μ PD75268CW-025		2201704 or	* 2SC3855-Y or
L104	233409M022	NCH-1272	C313,C314	354780229	2.2 μ F,50V,Elect.	Q703	22240376	μ PD17103CX-528		2201706	* 2SC3855-P
L201,L202	233294	NMC-5040	C315,C316	354741019	100 μ F,16V,Elect.		FL tube		Q507-Q510	2211255	2SC1815-GR
L551,L552	231176	S-1.3C	C330	354780229	2.2 μ F,50V,Elect.	Q702	212093Y	FIP9BTM8	Q511,Q512	2212600	DTA124ES
	Transformers		C551,C552	374724734	0.047 μ F \pm 5%,50V,Plastic		Transistors		Q513,Q514	2212285	2SC2878-A
L101	233401	NFIF-4072	C555	354722219	220 μ F,6.3V,Elect.	Q704	221282	DTC144ES	Q515	2211455	2SA1015-GR
L102	233402	NFIF-4073	C563	354780479	0.47 μ F,50V,Elect.	Q705	2212600	DTA124ES	Q516	221282	DTC144ES
L152	232139	NMIF-4062	C905,C906	3504207	6800 μ F,50V,Elect.		Ceramic oscillators				
	RF block					X701	3010163	CST4.19MGW			
L151	232152	NMRF-7052				X702	3010154	CST8.00MT			

POWER SUPPLY CIRCUIT PC BOARD(NAPS-4042-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
Capacitors		
C501,C502	354761009	10 μ F,35V,Elect.
C505,C506	354741019	100 μ F,16V,Elect.
C507,C508	374723334	0.033 μ F \pm 5%,50V,Plastic
C515,C516	354780229	2.2 μ F,50V,Elect.
CS17	353761009	10 μ F,35V,Elect.
CS25-C528	354761009	10 μ F,35V,Elect.
Resistors		
R511,R512	5215061	N08HR3KBC,Semi-fixed
R526,R527	442521004	10ohm,1/2W,Metal oxide film
R531-R534	4500005	0.22ohm,2W,Metal plate
Radiators		
	27160306Y	
Plugs		
P503,P504	25055495	NPLG-2P470

HEADPHONE TERMINAL PC BOARD(NASW-4328-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
S601	25035517	NPS-222-L479,Speaker switch
P601	25045255	YKB21-5009,Headphone terminal

POWER SWITCH PC BOARD (NASW-4329-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
S751	25035548	▲ NPS-111-S510,Push switch

POWER SUPPLY CIRCUIT PC BOARD(NAPS-4331-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
D920	223163	1SS133,Diode
S901	25035550	▲ NPS-111-L512P,Push switch
RL901	25065248	▲ NRL-1P15A-DC12-29,Relay
C901,C920	3500065A	▲ DE7150FZ103PAC400V/125V IS capacitors
P901	25050267	NSCT-3P95,Socket
F902	252075	▲ 2.5A-SE-EAK,Fuse
F902a	25050065	▲ YSH-403T,Fuseholder
	29360405	T2.5A,Fuse rating label

AC OUTLET PC BOARD(NAETC-4333-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
F951	252075	▲ 2.5A-SE-EAK,Fuse
F951a	25050065	▲ YSH403T,Fuseholders
P952	25050410	▲ NSCT-2P235,AC outlet

TONE CONTROL CIRCUIT PC BOARD (NAAF-4334-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION
ICs		
Q401,Q402	222502	NJM4558D-X
Capacitors		
C401,C402	354761009	10 μ F,35V,Elect.
C407,C408	354761009	10 μ F,35V,Elect.
C409,C410	374722234	0.022 μ F \pm 5%,50V,Plastic
C411,C412	354780339	3.3 μ F,50V,Elect.
C413,C414	374722234	0.022 μ F \pm 5%,50V,Plastic
C417,C418	354741019	100 μ F,16V,Elect.
Resistors		
R405,R406	5104225	N11RGLC250KWT22Z,Balance
R417,R421	5104230	N14RLC100KWT22Z,Tone
R418,R422		

VOLUME CONTROL PC BOARD(NAETC-4335-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
Q451	22240322	LB1639,IC
C453,C454	374724734	0.047 μ F \pm 5%,50V,Plastic capacitors
C473	354741019	100 μ F,16V,Elect. capacitor
R459,R460	5104243	N16RGM100KBTP25F, Volume,Variable resistor
P451	25050267	NSCT-3P95,Socket
P452	25050268	NSCT-4P96,Socket
S451	25035609	NPS-122-L571,Switch

CAUTION:Replacement for transistor of mark *,if necessary,
must be made from the same beta group (H FE) as
the original type.

NOTE: THE COMPONENTS IDENTIFIED BY MARK ▲
ARE CRITICAL FOR RISK OF FIRE AND
ELECTRIC SHOCK. REPLACE ONLY WITH
PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD-PARTS LIST

MODEL TX-7900

TUNER CIRCUIT PC BOARD (NARF-4325-2A)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
		Front end			Ceramic filters
TU001	240085	TFFG4E122A	X101	3010081	SFE10.7MS3GYA
		ICs	X102	3010137	SFE10.7MMK
Q104	22240039	LA1266	X151	3010123	SFZ450JL
Q133	22240090	LM7001	X152	3010076	BFU450C
Q201	22240242	AN7470			Crystal
Q301	222502	NJM4558D-X	X131	3010158	XTL-7.2M
Q324	22240158 or 22240339	LC7823 or LC7823N	RL551	25065339	NRL-2P5ADC24-046
Q902	222780055	78M05HF			Capacitors
Q905	222780125	78M12HF	C001	354761009	10 μ F,35V,Elect.
		Transistors	C106	354784799	0.47 μ F,50V,Elect.
Q101	2211723	2SC1923-O	C107	354742209	22 μ F,16V,Elect.
Q102	2210746	2SC945A-P	C108	354741019	100 μ F,16V,Elect.
Q103,Q132	2211255	2SC1815-GR	C112,C133	354780229	2.2 μ F,50V,Elect.
Q131	2212445	2SK365-GR	C113	354780109	1 μ F,50V,Elect.
Q134,Q135	2213510	DTA114ES	C131	374722234	0.022 μ F \pm 5%,50V,Plastic
Q202,Q555	2211455	2SA1015-GR	C132,C159	374723334	0.033 μ F \pm 5%,50V,Plastic
Q203,Q204	2212285	2SC2878-A	C134,C210	353782299	0.22 μ F,50V,Elect.
Q551,Q552	2211255	2SC1815-GR	C138	354721019	100 μ F,6.3V,Elect.
Q553	221281	DTC114YS	C154,C554	354780479	4.7 μ F,50V,Elect.
Q554	2211255	2SC1815-GR	C155	354741019	100 μ F,16V,Elect.
Q903	2211455	2SA1015-GR	C156,C157	354761009	10 μ F,35V,Elect.
		Diodes	C160	374721034	0.01 μ F \pm 5%,50V,Plastic
D101,D102	223132	1K60	C161,C208	354780109	1 μ F,50V,Elect.
D103,D105	223163	1SS133	C201	354744719	470 μ F,16V,Elect.
D131,D201	223163	1SS133	C202	354742209	22 μ F,16V,Elect.
D551	223163	1SS133	C204,C205	374721224	1200pF \pm 5%,50V,Plastic
D553	224150512	05AZ5.1Y	C206	374724734	0.047 μ F \pm 5%,50V,Plastic
D701	224150683	05AZ6.8Z	C207	370134714	470pF \pm 5%,100V,Plastic
D901	22380023	RBV401	C209	354780339	3.3 μ F,50V,Elec.
D902-D906	22380032	1SR139-100	C212,C213	354761009	10 μ F,35V,Elect.
D907,D908	224151203	05AZ12Z	C215,C216	354780229	2.2 μ F,50V,Elec.
D909	224152704	05AZ27R	C217,C218	374723924	3900pF \pm 5%,50V,Plastic
D910	224150512	05AZ5.1Y	C219	354780229	2.2 μ F,50V,Elec.
D911	223163	1SS133	C301,C302	354780229	2.2 μ F,50V,Elec.
		Coils	C307,C308	354721019	100 μ F,6.3V,Elect.
L103	233383	NMC-6070	C309,C310	374726224	6200pF \pm 5%,50V,Plastic
L104	233409M022	NCH-1272	C311,C312	374721824	1800pF \pm 5%,50V,Plastic
L201,L202	233294	NMC-5040	C313,C314	354780229	2.2 μ F,50V,Elec.
L551,L552	231176	S-1.3C	C315,C316	354741019	100 μ F,16V,Elect.
		Transformers	C330	354780229	2.2 μ F,50V,Elec.
L101	233401	NFIF-4072	C551,C552	374724734	0.047 μ F \pm 5%,50V,Plastic
L102	233402	NFIF-4073	C555	354722219	220 μ F,6.3V,Elec.
L152	232139	NMIF-4062	C905,C906	3504207	6800 μ F,50V,Elec.
		RF block			
L151	232152	NMRF-7052			

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors			Capacitors	
C907,C908	354742219	220 μ F,16V,Elect.	C701	3000057	0.1F,5.5V,Super
C910	354783309	33 μ F,50V,Elect.	C702,C704	375524744	0.47 μ F \pm 5%,50V,Plastic
C911	354752229	2200 μ F,25V,Elect.	C703	353780229	2.2 μ F,50V,Elect.
C913-C915	354761009	10 μ F,35V,Elect.		Resistor	
C917,C918	354781009	10 μ F,50V,Elect.	R710	49163103404	10kohm \times 4,1/10W,Array
	Resistors			Switches	
R101	5210221 or	N06HR100KBD	S701-S727	25035548	NPS-111-S510
	5210070	Semi-fixed		Holder	
R201	5210216 or	N06HR5KBD or		27190810Y	FL
	5210062	N06HR4.7KBD ,Semi-fixed			
R202	5210222 or	N06HR200KBD or			
	5210072	N06HR220KBD,Semi-fixed			
R559,R560	442520824	8.2ohm,1/2W,Metal oxide film			
R902,R903	441729114	910ohm,2W,Metal oxide film	ICs		
R904	442520104	1ohm,1/2W,Metal oxide film	Q501,Q502	22240108	μ PC1225H
R905	441726804	68ohm,2W,Metal oxide film	Q517	222502	NJM4558D-X
R906	442521004	10ohm,1/2W,Metal oxide film			
R910	441622704	27ohm,1W,Metal oxide film	Transistors		
	Terminals		Q503,Q504	2202492,	* 2SA1264N-R,
P001	25060117Y	NTM-2PDML051,Antenna		2202493,	* 2SA1264N-O,
P101	25060064	4P-5		2202243	* 2SA1694-O,
P102	25060061	1P-5		2202244 or	* 2SA1694-Y or
P301,P302	25045323Y	NPJ-6PDML180	Q505,Q506	2202246	* 2SA1694-P
P551	25060158Y	NTM-8PDML084,Speaker		2202502,	* 2SC3181N-R,
	Sockets			2202503,	* 2SC3181N-O,
P310,P901	25050267	NSCT-3P95		2202253	* 2SC4467-O,
				2202254 or	* 2SC4467-Y or
				2202256	* 2SC4467-P
			Q507-Q510	2211255	2SC1815-GR
			Q513,Q514	2212285	2SC2878-A
			Q515	2211455	2SA1015-GR
	IC				Capacitors
Q701	22240406Y	μ PD75268CW-025	C501,C502	354761009	10 μ F,35V,Elect.
	FL tube		C505,C506	354741019	100 μ F,16V,Elect.
Q702	212093Y	FIP9BTM8	C507,C508	37472334	0.033 μ F \pm 5%,50V,Plastic
	Transistor		C515,C516	354780229	2.2 μ F,50V,Elect.
Q704	221282	DTC144ES	C517	353761009	10 μ F,35V,Elect.
	Ceramic oscillator		C525-C528	354761009	10 μ F,35V,Elect.
X701	3010163	CST4.19MGW			Resistors
	Diodes		R511,R512	5215061	N08HR3KBC,Semi-fixed
D702	224150913	05AZ9.1Z	R526,R527	442521004	10ohm,1/2W,Metal oxide film
D705-D707	223163	1SS133	R531-R534	4500005	0.22ohm,2W,Metal plate
D709-D711	223163	1SS133			Radiators
D713-D720	223163	1SS133			27160273Y
	Coil				Plugs
L701	233400M220 or	NCH-2238 or	P503,P504	25055495	NPLG-2P470
	233409K220	NCH-1284			

CAUTION:Replacement for transistor of mark *,if necessary,
must be made from the same beta group (H_{FE}) as
the original type.

HEADPHONE TERMINAL PC BOARD(NASW-4328-2A)

CIRCUIT NO.	PART NO.	DESCRIPTION
S601	25035517	NPS-222-L479,Speaker switch
P601	25045255	YKB21-5009,Headphone terminal

POWER SUPPLY CIRCUIT PC BOARD(NAPS-4331-2A)

CIRCUIT NO.	PART NO.	DESCRIPTION
S901	25035550	▲ NPS-111-L512P,Push switch
C901	3500065A	▲ DE7150FZ103PAC400V/125V IS capacitor
F902	252074	▲ 2A-SE-EAK,Fuse
F902a	25050065	▲ YSH-403T,Fuseholder

TONE CONTROL CIRCUIT PC BOARD (NAAF-4336-2A)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q401,Q402	222502	NJM4558D-X
	Capacitors	
C401,C402	354761009	10 μ F,35V,Elect.
C407,C408	354761009	10 μ F,35V,Elect.
C409,C410	374722234	0.022 μ F \pm 5%,50V,Plastic
C411,C412	354780339	3.3 μ F,50V,Elect.
C413,C414	374722234	0.022 μ F \pm 5%,50V,Plastic
C417,C418	354744709	47 μ F,16V,Elect.
C453,C454	374724734	0.047 μ F \pm 5%,50V,Plastic
	Resistors	
R405,R406	5104228	N11RGHC250KWT22Z,Balance
R417,R421	5104229	N14RHC100KWT22Z,Tone
R418,R422		
R459,R460	5142001	N16RGP100KBTP25,Volume Switch
S451	25035611	NPS-122-L573

NOTE: THE COMPONENTS IDENTIFIED BY MARK ▲
ARE CRITICAL FOR RISK OF FIRE AND
ELECTRIC SHOCK. REPLACE ONLY WITH
PART NUMBER SPECIFIED.

ONKYO CORPORATION

International Division

Onarionmon Yusen Bldg.,23-5,Nishi-Shinbashi

3-chome,Minato-ku,TOKYO 105,JAPAN

Tel:03-3432-6987 Fax:03-3436-6979

ONKYO DEUTSCHLAND GMBH ELECTRONICS

Industriestrasse 20,8034 Germerring, GERMANY

Tel:089 84 93 20 Fax:089 84 93 226

N203 Printed in Japan